The Builder.

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Masters and Men in London.

CAN nothing be done to avert the threatened disruption of the building trade in the metropolis? A terrible crisis seems to be imminent, and it behoves every man who has the slightest influence to weigh the matter well, and to aid in bringing about a right conclusion by harmless means. The daily papers have made widely known the present position of parties. Let us briefly say that the delegates of the workmen, finding the Master Builders' Association declined to yield to their terms, called out the men employed by Mr. Brass, of Old-street (whose principal work is the New Post Office, St. Martin's-le-Grand), and by Messrs. Jackson & Shaw, who are building the New Colonial Offices in Downing-street. In the case of the latter all have left, but at Mr. Brass's the men who work at machines remain. On this occurring the committee of the Builders' Association held a meeting, and, after a long deliberation, resolved to convene a general meeting of the trade for (this) Friday, June 7th, at the Freemasons' Tavern, Great Queen-street, when a general lock-out will be recommended unless the workmen return to the two firms named on the existing terms. This, we are told, was determined unanimously, not by hasty show of hands, but by written vote. It is easy to believe that the builders came to this determination with the greatest unwillingness: the loss to them will be terrible. One firm tell us they estimate the loss to them would be 100*l.* a week. A second say 200*l.* Interest on capital embarked must be paid, rent, clerks, foremen, and others. They are most anxious, we can well understand, to avoid the general lock-out if possible, but they see no way out of the difficulty, believing that the advance asked for is not justified by the position of business, and feeling, moreover, that they have no security against a further demand next year. The men on their side profess themselves determined to listen to no compromise, and so the difficulty grows greater and greater. It would be agreeable to us if, following the impulse of feeling, we could conscientiously say to the masters, give the men "the nine hours" and give them the 9d. But would this feeling, would this saying enable the masters to do so, or make the act a wise one? We fear not. The large builders assert that they are not busy, and that there are plenty of men out of employ who have been anxious to come into their shops. The men themselves make it their argument for shortening the hours of labour that large numbers of artizans are out of employ, and that if they themselves only work nine hours instead of ten, and the same amount of work is to be done, a large number of those now unemployed must be taken on, and will thus be provided for. The argument is absolutely worthless. Carry it a little farther,—use it, as it may equally well be used, to justify working only five hours a day,—and this worthlessness becomes more strikingly apparent. The more straightforward assertion, "Our masters are making large profits, and we think we ought to participate in them," is less easily answered, excepting in the shape of counter-assertions, and these are not wanting. The cost of building in London and its neighbourhood has become very great, so great as, according to the master builders, to check it materially. Any further increase, they argue, is therefore to be deprecated, even admitting that it must be paid by the public and not by themselves; because it will further prevent building, or will drive it into the provinces, where wages are somewhat lower. As an example of this it is mentioned that the contract for the additions at the National Gallery has been taken by a country builder, who will prepare the work at a distance from Town, and send it up ready for fixing. It is reported that one of the deputation of joiners who met the Builders' Association said, when this probability was pointed out to them, "Very well; then, we must follow the work."

Putting out of view, the entirely selfish aspect of this observation, which ignores the fact that the London masters have large shops and establishments which they cannot easily remove, the trained operatives of the metropolis cannot wish seriously to destroy the London trade; the more clear-headed and sensible of them can scarcely believe that any advantage would result to them from such a course.

The diminution of the hours of labour and the increase in wages have been progressive. Some somewhat erroneous statistics having been published, an esteemed member of the trade, who remembers the lock-out of 1834, and that of 1859 (when the workmen unhappily starved themselves and their families for some twenty-five weeks, and gained nothing), has kindly looked through his books, and supplied us with the following correct particulars:—

		Working hours were per week.		Wages.		Per Hour.
40 years ago		60	...	27/- to 30/-	...	5½d. to 6d.
1847.	Left off at 4 o'clock	58½	...	30/-	...	6½d.
1853.	Advanced to 5/6 a day	58½	...	33/-	...	6¾d.
July, 1861.	Payment by the hour was introduced	56½	...	33/-	...	7d.
Sept., 1865.		56½	...	35/4	...	7¼d.
May, 1866.		56½	...	37/8	...	8d.

An advance in wages is not an unmixed good, and might go on simply bringing ruin to all. This has been found out in America. The recent report of the Massachusetts Bureau of Labour is regarded as affording a fair illustration of the general condition of labour in the eastern or manufacturing States; and in this view the facts embodied in the report are certainly not reassuring. The industrial classes are by no means represented to be in the prosperous condition that some of our politicians and legislators would have us believe. If they receive large wages, they are no better off for it, as they are compelled to pay them out again in increased prices for the necessaries of life. The report seems fully to confirm the assertion that American workmen are now worse off than ever before, and are able to save less, and obtain fewer commodities, in exchange for their labour, than at any former period. The Tariff Laws, which are chiefly defended on the ground of their supposed protection of labour, injure rather than improve the condition of the working men, and the artificial enhancement of wages is more than neutralised by the increased cost of living.

So in England the rise in wages has necessarily led to the increase of the cost of commodities, and might be such, as we have suggested before, as to place England at a considerable disadvantage in competition with other countries without corresponding advantage to individuals. However, we are by no means about to assert that the wise limit is yet reached; we are seeking simply to state quietly, dispassionately, and without one spark of partizanship, some considerations which deserve to be weighed by those who are about to commit themselves to a wasteful, costly, and barbarous struggle of endurance, from which, end as it otherwise may, all parties will inevitably retire losers.

And now what have we to suggest in order to prevent the national loss and the personal damage and privation that would result from a lock-out? We advise COMPROMISE; in other words, mutual concession. The time at present worked is 56½ hours, at 8d. an hour, bringing 37s. 8d. per week: the programme asked for by the men is 51 hours at 9d., or 38s. 3d. a week,—an increase merely of 7d. a week, so far as money gain to the men is concerned, though entailing a large increase in the cost of production, at least 12½ *per cent.* as regards the masters. What we propose is that men and masters should mutually agree to let the working hours per week be 54 (the hours agreed upon by the engineers), at the rate of 8½d. an hour. This would give exactly the same money result, 38s. 3d., and would more nearly follow the previous progressive improvements observable in the statement given above. Whichever side first proposes this concession will secure and deserve the sympathy and support of the outside public. Its joint acceptance would maintain good feeling, save money, and lead to the avoidance of much sorrowful sacrifice.

INDUSTRIAL DEVELOPMENT IN AMERICA.

AN article in the *Penn Monthly* on the Census of Industrial Employment, Wages, and Social Condition in Philadelphia in 1870, shows in a remarkable manner the extent to which purely productive industry has been developed there, and asserts that an almost entire exemption has so far been enjoyed from the agitations and conflicts that have occurred elsewhere. No matter how large or how small the establishment, there is rarely or never an occasion for difference between employers and workmen. Some of the greater iron works almost approach the co-operative system in the harmony of masters with workmen, and in the frequent exchange of acts of kindness and substantial benefits.

Taking last year, 1871, it may be roundly stated that a city of 800,000 people produced four hundred millions of dollars' worth of actual fabrics, exclusive of all mere sales or exchanges; and that on this mass of fabrics produced, the net profit, in the sense of values realised above the cost for values paid out, was nearly one hundred millions of dollars.

The world, generally, has concerned itself with the profits of mere trade, far more than with the interests and profits of creative industry, and it is thought that wealth increases satisfactorily when a city is made a point through which exchanges pass. This is a mistake. The values produced here in manufactures pay a profit not drawn from the consumer; it is a created profit, the creation of the active brain and the skilful hand. It is the direct wealth of powers which might, but for such opportunity, have been wholly wasted in idleness. For this reason it becomes conspicuous for the benefits it confers, and it makes itself seen and felt in a thousand forms that are not consumed with the day's demand.

No adequate discussion of the true relation of wages to national prosperity has yet appeared, but we assume that no other single fact has such permanent and overruling importance; nothing is so vital to the prosperity and endurance of a highly-advanced nation, as that the productive industry of its people shall be fully employed, and at the same time liberally paid. To be fully employed, for the time, at wages merely sufficient to maintain existence on the part of the employed classes, is to place its interests on the very border of a gulf of disorder and of suffering.

The census details show amongst other things that, speaking of the commonest factory labour,

one young woman now attends two power-looms, weaving 10,000 yards each of dress goods per year; where formerly one person of greater physical strength, attended one hand-loom, weaving not more than half as much each per year, or one-fourth as much in all; and show that the improvements of the past fifteen years have fully doubled the productive power of every person employed, and, what is better, have enlarged the basis of employment so that twice as many can be effectively employed.

There is nothing heard of strikes, or of hostility between proprietors and workmen. There are 92,112 adults, or full men, in the lists of persons employed at wages in manufacturing pursuits in this one city; a productive force really enormous, working as it is with over 2,000 steam-engines, of the aggregate power of 50,000 horses. "Almost unconsciously to most of our citizens, this vast machinery does its daily work, making fabrics of iron, wood, and textile fibres largely exceeding 1,000,000 dollars in value for every working-day in the year.

Wages fell somewhat heavily in 1868 and 1869, from the high figures of the war, but since 1869 they have advanced rather than receded further. Many classes are paid 21 dolls. per week, or 3·50 dolls. per day; many other classes more than this, and skilled persons at piecework earn even 5 dolls. and 6 dolls. per day. Mere labourers, of course, decline to 12 dolls., 10 dolls., and 9 dolls. per week, which last is the lowest rate paid to any labourer assuming to do a man's work. All skilled labour is really high, showing that the door is open to a scale of wages affording abundant means of living to all who have the capacity to work with skill at all.

There is little or no living in rooms, or in tenement houses, except on the part of some wholly unskilled labourers. This city is conspicuous for its great number of dwellings of abundant neatness and comfort, owned and occupied by single families whose whole maintenance is from manufacturing industry. And these houses, if rented, pay 15 dolls. to 25 dolls. per month, and, if owned by the occupant, taxes, interest, and other expenses represent a close approach to the same annual expenditure. That all this, with the current cost of living and the frequent expenditures for other than mere necessaries, is easily borne by our mechanic and workman, is sufficient proof that his resources from wages are comparatively ample. It is asserted that at least fifteen or twenty leading articles, in which the values made here now exceed half a million dollars each yearly, have been won in the last ten years absolutely as against foreign competition, and that the markets of New York, as of all other cities of this country, take now no other than the supply sent from Philadelphia manufacturers.

Reference is made to an iron-mill where the power of 800 horses and 1,200 men is directed to the production of a single description of wrought-iron work, exceeding 3,000,000 dollars in value in a year; and to another where 1,800 men and 500 horse-power finish a powerful railway-locomotive every working day of the year. In a third establishment nearly 800 power-looms, with 900 attendants, manufacture worsted goods at the rate of 10,000,000 yards per year; the aggregate value counting as many millions, nearly, as of the iron-works first cited. More than twenty establishments exceeding 1,000,000 dollars in annual production exist within the city, and at least ten exceed 2,500,000 dollars each, the highest closely approaching 5,000,000 dollars.

The writer claims that these establishments are essentially distinct from and beyond European establishments in all the characteristics of better-paid, more intelligent, and effective labour, and greater results in productive power. One of the proprietors spent a few months in England recently, visiting the districts and establishments making his own class of goods, and says that everywhere he found defective machinery, unintelligent workmen, and want of improvement very striking, in comparison with his own. "This contrast in progress is due to the fact that neither man nor master here stops to embarrass the other by needless contests, and neither rests for a moment in a routine of work that he may, by any ingenuity or any expenditure, improve. The whole body of productive establishments is full of life and progress: new and magnificent structures are daily rising to be filled with new machinery and better forms of labour." There ought not to be an hour's difference between employer and employed; but if the dead-level of starvation-prices is the basis, there can be no rest: if there is no skill and no intelligence developed to be observed and rewarded and to stimulate the workman, there is also no rest or peace.

There is surely matter here for both men and masters in Great Britain to note and think over.

A SKETCH OF THE EARLY HISTORY OF RAILWAYS.

THE introduction of the railway system into the United Kingdom is a subject of very considerable interest, both to the professional and the general reader, for it was rapid, and within a very few years it worked very marvellous changes. Under it not only was the whole breadth of Britain covered with works of construction of a magnitude and boldness before unheard of, but it revolutionised our whole social system, and paved the way to changes which have made the thirty years from 1830 to 1860 more memorable than any corresponding period in the material history of our country. With facilities for travel and transport came the penny post, free trade, telegraphy, practical knowledge of sanitary science, and vast changes in the residence and daily habits of the classes engaged in commerce and manufacture,—changes affecting the social, political, commercial, scientific, and financial progress of the country, all of which were prodigiously developed within that period by the agency, direct or indirect, of railways. Even our military and naval resources, our Colonial government, our tenure of India, our foreign loans, our trade with the extremes of East and West, have been pushed forward and expanded by the introduction of a free, cheap, and rapid intercourse between the several parts and dependencies of our own empire and of the world.

"Men" have "run to and fro," and
"Knowledge" of many kinds "has been increased."

These developments, however, from whatever source derived, belong rather to the history of the period and of the country than to that of railways; but these, in their strictest and most narrow sense, have also their history, and one full of peculiarities, of anecdote, of interest, always of an amusing, and often of an instructive character, arising out of the sudden collision between the new and old ideas and persons,—those who pushed and those who resisted the change,—especially in the rural districts of the country. The success of the Liverpool and Manchester railway was so complete, and the speed acquired upon it so utterly unexpected, that the attention of all England was called to the subject, and the energies of the promoters and opponents of the system were strained to the utmost.

Also the demand for engineers and surveyors and others employed in the preparation for and construction of the lines of railway that were at once brought forward, was far in advance of the supply. The London and Birmingham, the London and Southampton, the Grand Junction, the Great Western, the Greenwich, were all brought forward, or all under construction about the same time; and, of the whole staff employed, there were scarce a score who possessed any practical experience of a railway, or who knew anything, even in theory, of the accommodations to be supplied, or the dangers to be provided against in construction. The Liverpool and Manchester, the Stockton and Darlington, and even the Canterbury and Whitstable lines were the subject of close attention by all whose duties allowed them an occasional absence.

Moreover, the men who were sent out to prepare the plans and take the levels found themselves among people of the deepest agricultural dye, for the most part vehemently hostile to the proposed undertaking, and resting their opposition upon the most extraordinary and baseless notions of what its effects would be. The landowners dreaded competition with their produce; the rural clergy feared lest men should run to and fro and secular knowledge be increased; heads of schools and colleges, especially of Eton and Oxford, predicted the destruction of discipline and the demoralisation of youth; sportsmen declared that game would be frightened from the coverts, and hunting become impracticable; the peasants were jealous of the high wages paid to the staff men; millers feared for their water-courses, and with farmers, corn-dealers, and maltsters formed themselves into associations to oppose "the Bill;" and all prepared to give evidence against it before the Parliamentary committees.

Most amusing were the stratagems had recourse to to effect or prevent the necessary surveys. The squire and the parson were usually the leaders in averting trespass, and the surveyor often had to work by night, or to observe what he could from some contiguous road or canal-bank, or some footpath traversing the demesne. On one occasion a Dorset squire and M.P., celebrated for his monosyllabic nickname, captured a whole staff of surveyors and chainmen, and kept them all night in custody within a barn. Another time, it happened to be of vital consequence to the success of a Bill to have an accurate survey of a very complex demesne round a nobleman's house, in a county in which the Ordnance map was inaccurate, and afforded little aid. The tythe maps were then unknown, and the parish terrier was in the rector's study. There was no friendly canal, no convenient footpath, and all were on the alert. What was to be done? Time pressed, and the enemy were well aware that an error in the representation of the manner in which the railway would affect the house would be fatal. The chief engineer,—a man of more energy than taste,—waited on the peer, assured him first that the viaduct would not be seen, or that if seen it would be ornamental, and then offered to cover it with ivy, to paint it yellow, or with his lordship's arms upon each spandrel. All was in vain. There was, however, a church with a very lofty tower, near the mansion, and a second, of equal altitude, about a quarter of a mile distant, beyond it. Early one summer's morning two innocent-looking antiquaries called at the two rectories for the keys of the churches, and were accompanied in one case by the rector, in the other by the clerk, to see the building. Questions were asked as to the date of the bells, and details of the tower, which were opened, and then, while the showmen were engaged in the chancel, the whole band entered the tower, wedged up the door, drew up the ladders, pitched their theodolites on the leaded roof, and proceeded to fix the principal points of the demesne, and to sketch in the details. The success was complete. The tower remained in a state of siege all day. The peer himself and his keeper visited the spot, but the door was strong, the tower high, the garrison well victualled, and when, after dark, they descended, the ground was left free, for resistance had become useless.

The Ordnance map, save those of Essex, in the counties north of London, was usually tolerably accurate, and of great use in laying down the general course of the line, but it afforded no aid towards obtaining the levels, or, as they were technically called, the sections. Here the canals were of great use, for the level of each pond was known and accurately laid down upon Bradshaw's celebrated canal map, the sale of which increased enormously. From the canal, where access was denied, the levels were brought up to the nearest open ground, and then men were sent in at full speed to set up their staves, which were at once read, before the keepers could come up. Sometimes a shed of brick stood near, and the courses could be counted. Sometimes, to avoid suspicion, a man had a scale of feet pasted right up one leg and his back, and did duty as a staff. Once, where it was very important to get the height of one special and well-watched spot, in the midst of a grass field, a horse happened to walk across the line of sight, and his shoulder to intersect the horizontal web of the telescope. Boys were sent to pelt him off the field. The quadruped made for a gate. He was there attracted by a supply of apples, caught, and measured, and the required level obtained, possibly with more ingenuity than accuracy! but the surveyor could declare upon oath before the Lords that the section had been actually taken.

The Great Western met with very vexatious opposition from the leading landowners near Marlborough, who were justly alarmed at the diversion of the Western traffic from the turnpike trusts and private property along the Bath road. It was proposed to punish this opposition by the conversion of a very celebrated, ancient, and much-prized local monument, a white horse, not *the* white horse, into a locomotive, the very idea of which was an abomination to the neighbourhood. Sketches were taken to scale, a large pattern schemed, and it was proposed to send down fifty surveyors at nightfall to peg out the outline on the grassy slope, and then scraping away the turf, to transmute the quadruped into a magnificent engine, bearing G. W. R. in large letters on its boiler. The squires never knew how near they were to this dishonour. Fortunately for their peace of mind, the opposition

was withdrawn in time, and the project fell through, to the intense disgust, if not of the original deviser of the joke, yet of the executive, one of whom, a well-known Bristol man, a retired naval officer, was the leader in all sorts of fun, as in all hard work. Of lesser mischief, such as painting gates red, serving false notices, and pranks somewhat in the Theodore Hook line, there was no lack, but in truth the opponents were so violent, and so seriously overstated their own case, that their account of their real grievances was not always credited.

Once, near Malmesbury, in the midst of a most bucolical district, the late George Hennet, while taking sections across a green, was pestered by a mob of girls, who, half from curiosity and half from love of fun, much impeded his operations. Calling the leader of them, he let her look through his glass, where she saw the staff-holder inverted. "There," said he, "if you do not go away I will turn my spy-glass upon you all, and see you on your heads, and then where will your petticoats be?" They all shrieked out and ran away, to the great delight of Mr. Hennet, who was very proud of his idea, and quite unaware that Niebuhr had got rid of the Arabs in the same way.

There is, or used to be, the mistress of a great establishment at Stroud, who was thrown into a state of serious agitation when told that the railway would be carried some feet above the roof of her brewery. The effect upon the town was also serious, and the fear of what might happen to their much-loved tipple was one of the causes of a local riot at one of the promoters' meetings. It was at Stroud that the Cheltenham railway lost most of its local support, by the statement of one of the engineers, that a tunnel would be driven through Saperton-hill much longer than the canal tunnel, and several feet below it. The thing seemed to the rural mind impossible.

The plans and sections were required to be deposited with the several clerks of the peace by midnight on the 30th of November, and great were the exertions made to secure this. The Bristol and Exeter railway, about seventy miles long, was proposed, a company formed, and the plans completed in about six weeks, the actual survey occupying about a fortnight. Fortunately the country was mostly level, and with few enclosures, and those of large area; but the line passed by Taunton, Bridgwater, and Wellington, and near to these towns, as to Bristol and Exeter, the work was intricate and laborious. Brunel was the engineer, and Gravatt, a man of great energy and skill, his chief assistant. Surveyors were brought from all parts, even from Lancashire; a central office was established in the great room at the Bridgwater Hotel, and there as fast as the work was knocked off, it was put together. The levels were checked by an instrument of unusual size and power, which read at very great distances. During the whole fortnight no man went to bed; they surveyed by day and plotted their work by night, sleeping as they could in postchaises or armchairs, and sometimes over the drawing-table. The day after the deposit the staff had a sumptuous dinner at Bridgwater, and several fell asleep at the table before the dishes were removed. The survey held good, though attacked by a very powerful opposition, led by a certain well-known Rev. Procktor Thomas, and by Mr. Merivale, whose residential property near Exeter was interfered with.

The Taff Vale, Brunel's only narrow-gauge railway, was also started upon short notice. There the work was put together at the Cardiff Arms, at Cardiff, and about eight o'clock on the night of the 30th, a serious discrepancy was discovered in the levels near Newbridge, eleven miles distant. Brunel was present. Instantly lanthorns were purchased, chaises ordered round, and twenty surveyors and staff-men bundled into them and sent off to Newbridge. On the way Brunel explained to his chief assistants what he wanted. Each man marched off to his post, fixed his staves and lanthorns; Brunel himself ran over the ground, about a mile, with his level; the error was discovered and corrected, and the plans were deposited that night at Cardiff with six minutes to spare. It was upon this railway, opposed in committee with the utmost keenness by Lord Granville Somerset, that upon some suspicion of an error of section an eminent ironmaster proposed quietly to alter the ground, a cinder-tip, since the deposited plans could not be altered.

These combinations of rapidity and accuracy, and the reckless expenditure of money, bewildered the old-fashioned surveyors. The level was an instrument then but little known. Draining operations, not then very common, were carried on with an ordinary spirit level with two sights, and accuracy to within an inch was considered sufficient, whereas the new men levelled to three places of decimals. The most accurate land surveyor thought little of height. It is recorded that a well-known Welsh squire, descanting upon his complete knowledge of his estate to a scientific officer, was asked, "Oh, you know Mynydd Garth, do you?" "I should think I did," quoth the squire, "and all about it." "Indeed! pray what is its height?" "Ugh!" grunted the discomfited squire, in a half aside, "What a question to ask of a gentleman!"

Architects, as a body, were in those days very ignorant of engineering knowledge, and incapable of calculating the strength of a beam or the thrust of an arch. The setting out of the lines for a skew bridge was an operation quite beyond them, or, with better excuse, the laying out the curves of a railway. In a suburb of London, rather an eminent architect came one day to the resident engineer of a railway, in great trouble: he was to build a crescent, or rather a semicircle, and his only notion of setting it out was by means of a long cord from a central peg. Unfortunately a church had already been built over the centre, and hence the difficulty.

The theodolite also was an instrument entirely unknown, even by name, save to the royal engineers, and a few of the leading civil engineers. On one occasion the late Colonel Everest was visiting a Warwickshire peer, and exhibiting and explaining what the ladies called his "theolodite." With t he mentioned that he had surveyed large tracts of country in India. "Indeed," said his host, "and can you survey a farm?" "Certainly," was the answer. "Then, colonel," said my lord, perfectly serious, "as you don't shoot, would you oblige me by surveying my home farm while we are out this morning!"

The construction of the book of reference in which each field or house was scheduled and described was claimed by the solicitor, who was, of course, more or less dependent in the matter upon the engineer. The solicitor, or rather his clerk, sometimes an underbred and rather presumptuous person, found little favour with the engineers' assistants, who were often gentlemen, fresh from a public school or college, many of whom took to their work half for the fun of it. On one occasion a clerk of a leading London firm, himself a thorough Cockney, was sent into Wales to make up the book of reference, whilst the survey proceeded. He thought the place and time suitable for a splash, so he came down to the inn in dandy costume, ordered a horse for his work, and, dining with the young engineers, boasted of his new boots and steel spurs. Unfortunately he put his boots outside his door. There they were of course filled with boiling water, and by no exertions could they be drawn on in the morning. The box-spurs were useless, and the gentleman had to set forth in shoes and stockings much crest-fallen.

On another occasion a short line between two western towns had been surveyed and was all ready save the book of reference. On the afternoon of the 28th this omission was discovered by the engineer in London. The attorney was out of town, so an assistant engineer was despatched by mail with directions to look up the local solicitor and land surveyor, and by hook or by crook to get the work done. It was a tough job, but the plans were good ones, the local information was very good, and the book was made and deposited by the prescribed time. The sub-engineer returned to London, and meeting the attorney, boasted how he had saved the project. The attorney was furious. "I wish, sir, you gentlemen would mind your own business;" and then it came out that he had absented himself on purpose, wishing to postpone the project for a year, when he expected to be less occupied. On another occasion this gentleman, who was the head of a very important firm, came to a well-known and most upright Parliamentary agent, now a Queen's counsel. "I hear," said he, "B., that you have given the Speaker some advice about diminishing the expense of private Bills." "I have," was the answer. "Then, by G—d, I am ashamed of you. Here are you and I and some half-dozen of our friends coining money by the present system, and you must need go and knock it on the head." "But," said B., "the Speaker himself sent for me and asked my candid opinion. What else could I say, as an honest man?" "Candid opinion! honest man!" exclaimed the lawyer, mad with rage; "what business have you, with a wife and children, to take such views?" and out he flounced.

No doubt, the temptation to safe dishonesty was in those days very great, and much given way to by all parties concerned in railways. The writer was once asked by the degenerate son of a great father which way it was proposed to carry a proposed line, in order that he might buy a farm on the route, and get compensation for the injury. On another occasion, a railway was to run within sight of the country house of a well-known man of influence. He was upon the Parliamentary committee, and determined that the Bill should not pass unless he got his compensation, some thousand pounds, for residential injury. The rest of the committee knew this, but were not honest enough to thwart him. The compensation was agreed to, and the Bill allowed to pass. Next year, being stronger, the directors came to Parliament for amendments, and, among others, for a deviation into tunnel off the claimant's land, and, of course, out of sight of his house. "Well," he said, "I do not care. Of course, you pay me my compensation." "No," they rejoined; "we do not injure you and shall not compensate." "You are a pack of rogues," said he. "You know very well that the money was not to cover an injury, but to buy off my Parliamentary influence." And no doubt he spoke the truth, though rather more plainly than most men would have had the assurance to do. Upon the Great Western, Lord Holland was one of the very few peers who took no advantage of his position, though for this he was rather laughed at than imitated. There was a peer, on the line of the Midland, under whose land it was proposed to carry a tunnel. He came to a director, a neighbour, and complained bitterly that the trembling of the ground would destroy his best pheasant preserve. The director wishing to oblige him, said nothing, but represented the case at his Board, and in committee it was decided to avoid the peer's land altogether. When he heard this, nothing could exceed his wrath, and it then turned out that his communication was by no means intended to get the line shifted, but to prepare the way for a claim for heavy compensation.*

ENGINEERING WORKS IN PROSPECT.

ADMIT that few, if any, *great* railways remain to be made in the United Kingdom, still, vast undertakings wait the attention of the engineer in the colonies and in foreign states. Proceedings have been already commenced, indeed, with some of these. At Auckland, New Zealand, Messrs. Brogden have commenced the construction of a railway that, as the Liverpool and Manchester was in this country, is destined to be the commencement of a complete system of railway communication for that prosperous colony. The profligate waste of capital that has marked the tangled maze without a plan in the railways of the Great Britain of the north will, doubtless, be avoided, in laying out the lines of the Great Britain of the southern hemisphere, which will have, it may be hoped, a railway system worthy of the name.

Great things in railway construction are also to be accomplished, it appears, in Egypt. Last summer Mr. John Fowler, C.E., on the invitation of the Viceroy, went out for the purpose of advising his highness as to the railway or other engineering works best fitted to develope the resources of the country. Mr. Fowler is not a man of "timid counsels." A first result of his visit was to take out a staff of about thirty engineers, and assistants, and to put them to work upon the survey of a line of railway of about 600 miles in extent. The survey has been completed most satisfactorily; the plans and sections are being drawn; and there is the strongest probability that this great work will in due time be executed. The line will commence at Wady Halfah, on the second cataract of the Nile, and in 22° N.L. To Old Dongola, 18° N.L., the line will be on the inner edge of the valley of the Nile, and at an average distance of about three-fourths of a mile from the banks of the river, and so laid out as to be above the level of the annual inundations, in which the waters rise more than 30 ft. at some points. From Old Dongola, or a little to the southward, the line will strike across the desert of Bayuda, keeping, with slight deviations, to the caravan-track. The distance across the desert is about

* To be continued.

160 miles, and the object in taking this route is to avoid the great bend in the river between Edab and the sixth cataract. In the latter locality, about 16½° N.L., the railway will again take the valley of the Nile, and proceed in a direction almost due south to Khartum, at the confluence of the Blue with the White Nile. Future extensions will probably be to the fertile valleys of the Blue Nile, and its numerous tributaries in Senaar and Fazuola; and in another direction, probably, to the south-west, to the provinces of Darfur and Kordofan.

But there are numerous other notable engineering projects on foot, some of which aptly illustrate the felicitous speech delivered recently by Mr. Gladstone, at the annual dinner of the Institution of Civil Engineers. The Premier, addressing his hosts, said that they differed advantageously from her Majesty's ministers; in that the benefit of their performances was unanimously acknowledged. "There is," said he, "but one personage who, if she were gifted with a tongue, would raise her voice against you, and that is your ancient Mother Earth. Whatever benefits you have conferred upon her mankind, on her you have inflicted cruel suffering. The guilt of the matricide is great, but your iniquities are greater still, for you have mutilated and mangled your first parent without putting an end to her existence." . . . . . "The cataracts of the Nile are no longer secure. I believe the next step will be a railway across the Great Desert of Africa." We have just shown that the regions of the cataracts are to be invaded by the fire-fed iron steed, and that one of the lesser deserts is to be crossed.

The accusation might have been brought against the engineering profession for liberties taken with Father Ocean, as well as with Mother Earth. Mr. Fowler, by his international communication project, proposes to convey railway trains across the sea; by another scheme, "the Honduras Ship Railway," it is proposed to convey ships, 200 ft. long, weighing, with their cargoes, 2,000 tons, across the dry land! This proposed ship railway is to connect the Atlantic and Pacific Oceans. The carriage on which the ship is to be transported is to have 240 wheels, running upon six rails, of 120 lb. weight to the yard, and placed 5 ft. apart form each other. The carriage is to weigh from 600 tons to 700 tons, is estimated to cost 20,000*l.*, and to require from four to ten powerful locomotives, according to the state of the rails, to draw it and its load. The capital required to attempt this wonderful feat, is fifteen millions sterling, the whole of which is wanted on or before the 16th September next; those who subscibe it would need the best advice of the most skilful and experienced engineers, and the counsel of the most astute and trustworthy financiers.

But engineers have more practical, practicable, and useful fields of enterprise open to them than sea-railways or land-navigations; and, happily, there are symptoms of awakening to a sense of the unspeakable importance of their cultivation. The number of projects for new railways in the United Kingdom is smaller than it has been; but the demands for an abundant and cheap supply of the prime necessaries, gas and water, are becoming constantly more numerous and clamorous; and, as regards the cleansing of towns, communities are becoming impatient of the pernicious influence of matter that Lord Palmerston referred to as being "the right thing in the wrong place." Sanitary engineering presents an almost illimitable sphere for beneficent and profitable action to the profession,—a sphere that embraces almost all people and climes. In the present session of Parliament, Bills for sanitary objects occupy an unusually prominent place. At the commencement of the session there were petitions presented by corporations, local boards of health, and other local authorities, for twenty-eight Bills, most of which contained provisions for improved gas or water supply, or for a system of sewerage, some of them including all the three objects. In addition to these were petitions for seven sewerage Bills, and for thirty-six gas Bills, water Bills, or for gas and water combined. None of the Bills that have reached committee in the present session, the Mid-London Railway Bill excepted, have occupied nearly as much time, or excited anything like as much interest, as the sewerage Bills of Birmingham, Bury, and Rochdale. The sewage-doctors are far from being agreed, it is true, but contention is better than stagnation, and continued discussion and agitation may be expected to settle satisfactorily, and ere long this conveyance and utilisation of sewage question, that so vitally affects health and disease,—even life and death.

There are at present other gratifying evidences, in addition to the number of Bills with sanitary objects before Parliament, of the growing attention and the sense of importance attached to sanitary questions. In these days many projects obtain Parliamentary sanction under general statutes, that formerly required special separate Acts. Of such are some pier and harbour, and tramway Bills, which are embodied in one Provisional Order Confirmation Act in each session. Numerous projects are also brought before the public, and joint-stock companies are formed with limited liability, to carry such projects into effect, under the powers of the Joint-Stock Companies Acts of 1862 and 1867. There are ebbs and flows at irregular intervals, falling and rising to varying depths and heights, in the speculative tides upon which private Bills and joint-stock companies are floated. The flood-tide indicates that money is easy, and commercial confidence firm. Some of the projects launched at such times indicate, it may be added, that the credulity of capitalists is excessive. It is curious to notice, when there is a plethora of capital, what a number of "good things" are offered, at a price, to those who are ready to part with it, in the hope of a good return. Railway-ships and ship-railways, mines, rich as those of Golconda, and far more extensive, yielding profusely all sorts of useful minerals and precious metals; wharfs, foundries, warehouses, printing concerns, manufactories of all kinds, are pressed upon the acceptance of the public; and the peoples of the colonies and of foreign states make tempting offers as to the interest they are ready to pay for a share of the redundant capital. Some of the projects that have been announced in the course of the last ten days are curious alike in their names and objects. Taking them at random: there is a Welsh anthracite coal company that needs 100,000*l.* for its due development; a North of Ireland iron ore company that needs 200,000*l.*; a wagon company for the manufacture of railway and tramway plant, and agricultural implements, that desires to raise 100,000*l.*; a Welsh coal and iron company, that requires 550,000*l.* to work the minerals under 10,000 acres of freehold and leasehold land, to work 13 colleries, 9 blast furnaces, 115 puddling and mill furnaces, 4 forges, and 7 rolling-mills; the Knightor, Treverbyn, and Resugga Hæmatite Iron Ore Company wants 105,000*l.*; the New Zealand Kapanga Gold Mining Company needs 100,000*l.* for investment in a field of enterprise that has achieved "marvellous success," to work an "exceedingly valuable piece of auriferous ground," from which "enormous dividends" may be expected, that will yield "astounding productions"; the Ruby Consolidated Mining Company proposes to raise 325,000*l.*, and promises wonderful results from the Bullwhackery, the Dunderburg, the El Dorado, and other silver lead mines; the North Costerfield Gold and Antimony Mining Company, and the London and St. Arnaud Gold and Silver Mines of Victoria, require 50,000*l.* each; and the Great North Caradon Silver, Lead, and Copper Mining Company, of the parish of Advent, Cornwall, invites capitalists to invest the modest sum of 30,000*l.*; and the Mendota Mining Company, of Lake Superior, can put 750,000 dollars to good use. Mining operations involve engineering, but there are many speculative projects at present before the public that only indirectly, or slightly, "requisition" the engineer, civil or mechanical. Among such are the Patent British Asphalte, the Trident Marine Insurance, the National Printing and Publishing, the Patent Cotton Gunpowder, the Butler's Wharf, the National Safe Deposit (for the custody of valuable property and documents), Pavy's Patent Felted Fabric, the Anglo-German Express Transit Companies, and others. The city of Quebec bids 6 per cent. for a loan of 100,000*l.*, and the Philadelphia and Reading Railroad Company offer the same interest upon 3,000,000 dollars. The Plymouth Kankakee and Pacific Railroad Company want 2,000,000 dollars to complete works, the investment to yield over 8½ per cent.; and the Porto Alegre and New Hamburg (Brazilian) Railway Company wishes to raise 292,500*l.*, for which 7 per cent. is guaranteed.

The new companies proposed include several for sanitary and cognate objects. Amongst these are, the new Gas Generator Company, with a capital of 250,000*l.*, to be raised for the purchase and working of certain patent rights, the handsome price of 100,000*l.* being proposed to be paid for the English patent rights, and 120,000*l.* for the rights for foreign States, India, and the Colonies. The inventions must be valuable indeed, if they are worth even half the money. The British and Foreign Water and Gas Works Company, with a capital of 800,000*l.*, has for its object the carrying out of water and gas works, and any other works in connexion therewith, in those cities and towns where the introduction of gas and water is demanded, and is certain to be attended with profitable results. It is not intended to lock up the capital of the company in the permanent retention of any of the works undertaken. Among the other new sanitary companies proposed are, the General Sewage and Manure Company, to work Dr. Anderson's system of precipitation, the British Chemical and Agricultural Manure Company, and Lawe's Chemical Manure Company.

Sanitary improvements are among the most urgent and important social requirements of our day; and it is a gratifying sign of the times that increased attention is given to them. On the engineering profession devolves mainly the duty of action as the champions of the people against pestilence. Let them enter the lists bravely and hopefully, against an enemy of great might, with far-reaching outposts, and strong supports. Let them fight ever so good a fight, generations will pass away before they are reduced to the condition of Alexander the Great, of sitting down to weep because they have no more worlds to conquer.

"ARCHITECTURE."

AN obliging correspondent has sent us some interesting arguments and conclusions drawn, as he states, from the last number of the *Sexagenarian Review* (April 1st, 1872). As they have probably escaped the attention of others besides ourselves, we take this opportunity of presenting some portions of them to our readers, who may not otherwise have a chance of seeing them. The general resemblance, especially in the objurgatory details, to certain now well-known very remarkable productions may indicate something beyond the mere foundation and the earliest stages of a new school of art criticism. On this, however, it is difficult to speak with precision. The subject appears to be "The present State of Things in general."

Wherever we turn, the exhibition is melancholy and hopeless, almost without exception,—a complete *inferno* and a national disgrace. In politics; in diplomacy; in army reconstruction; in navy management; in the church, with its clergy without common sense, goodness, ability, learning, or eloquence; in the law, blasted by the learned-unlearnedness of lawyers; in medicine, given over to empiricism, routine, and endless innovation,—we should be able to show such samples, and even such combinations of inaptitude, inexperience, ignorance, and absurdity as it would probably be impossible to find on the face of the globe. Why need we complete the dismal tale of utter forlornness, by pointing out the existence side by side of elaborate show, and staring vulgarity, and despicable meanness? Literature we find given over to the intolerable self-assertion of authors, intensely eager for applause, writing down to their readers; or else their minds, being weakened by subordination to a vain imagination, become the feeble worshippers of their own poor work. In painting are shown the clear evidences of mental debasement; in sculpture, a class of gamblers for commissions, whose productions are a curse to the nation, and in various degrees of vileness a travesty of art.

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We cannot, in the course of this paper, take each separate division of our national life, and show fully the shortcomings, the palpable failures, the ineffectiveness, and imbecility that, as we have stated above, are everywhere discernible to the instructed eye. There is, however, an art, of which similar things may be said with equal truth, that, for various reasons, may suitably serve as first body to be used in such an experiment. The profession of Architecture being weakened by internal strife and dissension, and long considered a mark for the almost constant exercise of the sort of wit that only fitfully assails all other special professions and trades, the sympathetic conditions seem in existence that will render quite unnecessary any manifestation of that weighing and deliberation, and that precise adjustment of praise and blame which weaken the utterances of which they form

a part. Delicate, almost imperceptible touches may produce a delineation that shall enable any eye to see things as they really are, or may even, by lifting the veil (so to speak), make evident unperceived, and therefore unvalued, excellencies; but a far grander and at the same time less difficult task is undertaken by the hand that, with boldness, broadens and deepens the shades and shadows; till, Rembrandt far out-done, luminous shade shall be in turn superseded by a terrible intensity; and, by evenly-spread layers of pigment from which no light can be reflected, is shown the unmistakable semblance of ebon night,—unflecked even by a single borrowed lunar beam, or by the faintest traces of a dawn to come. Thus, in the remarks which we feel it our duty and pleasure to make, we are mainly anxious to strike hard and home; and are influenced by no personal or professional reasons for reticence in doing so. This would indeed be out of place in a matter so far removed from consideration of individuals, as a living art practised by living men. In order to treat the subject adequately, a standpoint is required from which all the ages may be viewed, and, of course, all the prominent human objects, puny though they be, appear in long trains of shadow under the blinding light that the observer must throw upon the nearer portions of the scene, in order to reach at all its further boundaries. It will be necessary to carefully pick out special examples for pointed condemnation from the numerous works that have been produced of late years, in order to bring our work into narrower compass, and to secure support by the selection for comment of those that seem most likely to tell in favour of our aim, excluding all others. The buildings must be by men who are accepted as "eminent" (holding high position) in their profession, and of well-known personal ability, which will naturally suggest presumption of a certain kind to the discerning reader: they must also be familiar by name, and otherwise to everybody — a pair of conditions that limit us to some of the best known public works. Any generally acknowledged partial or entire failure will be particularly suitable, as it can be dealt with, if desirable, in a specially curt, decisive way. We shall also be the better able in such cases to readily suggest modifications, amounting in some instances to complete reconstruction. The ease and comfort of this part of our task will be added to, by taking care that execution and any subsequent unfavourable criticism shall both be well beyond probability.

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For the sake of effective contrast it will be desirable to paint some minor subjects in bright and cheerful hue; which, placed in the midst of, and thus bordered by, the prevailing sombreness, may divert attention. Pictures of the workmen who produced our old national architecture, will be very serviceable for this purpose. In the absence of such autobiographical or other revelation, or of such fiction or drama, as would be an authentic guide—we can only fall back on our inner consciousness, and make good use of that most effective implement of investigation, with its really infinite possibilities, if thoroughly applied. Though not of modern discovery, nor little used in previous ages or other countries, some of the dominant influences of the present period of intense literary production have brought its use into more universal recognition. Like a tropic temperature acting on a plant too often stunted in growth by destructive chills and adverse circumstances, the warm popular breath has driven off and rendered harmless the blighting influences of inane caution or plodding precision. The mingled moan and whine of querulous discontent craving quoted authorities has, happily for us, become only a tradition of a base past now well nigh forgotten.

We find it necessary that the handicraftsmen of old days shall all be men of high culture and powerful mind, and we are therefore bound to conclude that "their work was simply a delight to them,—the outward form and expression of minds sympathetic and serious, but not in the slightest degree superstitious or debased." Their method of working shall be similarly evolved. Let us regard in imagination for a moment "a village church where there is not even an external plinth, but the rudest, unsophisticated walling: a stumpy, 'ungraceful,' but very sensible and useful tower, and scarcely a moulding or ornament about the building." Here is no trace of stunted power, of incapacity to realise, or unwillingness to aim at a perfected art. The whole is, in truth, complete evidence of the sympathetic circumstances of the workman. If by chance we see the single detail that gives some refinement and dignity to such a work, we see at the same time that it is clearly the work of the village mason, who also drew the plan, and executed with his own hands the walling around. We know from intuition that it cannot be from another hand fresh from the masonry of the great abbey on the way to the rebuilding of a cathedral choir. On this basis of fact we are able to decide that, in the golden age, the richly-endowed worker (now only to be found here and there),—perfection in its kind awaiting each almost effortless touch of his practised hands,—found absolutely no Gibeonites around him. We are thus able to confidently overcome any natural misgivings as to the universal prevalence of all the virtues, and most of the talents in one special age. The happy social surroundings and private life of the old workman, in such strong contrast with those in our own days, might be enlarged on at any length, if expounded in the fullest detail; but the result will be, for all practical purposes, the same, if for the sake of brevity we trust to each reader's fancy. We have preferred to treat of the mental and moral consciousness,—which is, after all, the most important matter, since they are always independent of all mere external accidents.

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It is necessary, however, that a few words at least be devoted to the apparent consideration of our ostensible subject; though, in fact, by the use of simple nomenclature our purpose would probably be more easily carried out. All right-thinking people strongly dislike the system of division of labour, so bespattered with praise by the soulless chatterers of the pseudo-science of political economy. The results of the existence of distinct occupations,—even though the persons who engage in them are specially educated and well fitted for their work,—superseding the necessity for each man's personal attention to all his various needs, require of course no condemnation. If we could recur to the period of pastoral life and single households, and the manufacture in each family of all its necessaries, we should have gone far towards the realisation in the present of the dream-like happy past. And to this we can approximate more or less nearly, even if we find it practically difficult to bring it about in all its noble simplicity. At least we can denounce with all our might the existence of the several specialities,—the so-called "professions,"—ignorantly stated to be called into existence to suit the needs of our people, and that are maintained and obviously strengthened day by day. If some of these weeds of dainty egotism must remain to suit the insensate folly or the base ostentation we find so prevalent, let us as much as possible eradicate new growths, and crush,—or at any rate injure, if we can,—those that have not yet taken too firm a root. That a man should arrogate to himself the title of "a healer," and endeavour to undervalue or supersede the health-promoting habits of self-doctoring,—in better times the almost universal rule,—may admit to some minds a partial justification; but the right-minded will safely leave him to his pretentious attempt to limit the occupations of his fellow-men; and, in the worst event, with no result more painful than premature decay or crippled limbs. The same rule holds good throughout the whole of the affairs of life. Honest personal work would render us in all things equally independent. An architect is, however, so often represented as the combined artist and man of business, by nature and training the contriver of fitness and beauty, and by habit and knowledge able to set agencies to work so as to realise his schemes, that people are beguiled into securing or sanctioning his employment, forgetting in their inconsiderateness that even in law any man may wisely be his own client. Let such be warned in time, and avoid the pitfalls in which they may otherwise find themselves.

If a man does not know his real wants and is anxious to obtain skilled advice thereon, he should rather in truth begin by learning well for and by himself. Life would thus be answering its main end in affording scope for mental and moral discipline. If in this way ignorant he should first become well informed,—just as the diagnosis of disease, at least, should never be the work entrusted to "the healer," but should be undertaken solely by the patient. . . . If eager to begin to build after slowly resolving, as, indeed, usually happens, why should he not commence at once without too close a care for details,—even in a structure that will be considered fitting and complete only if it supplies provision for all the artificial wants of a feverish over-civilisation? His first eagerness will be certain soon to exhaust itself; and by patient abiding effort all may be brought into wonderful harmony—by a resort to emendations, to partial destruction and reconstruction if need be. The features by which such changes of intention are announced, or by which original defects are to some degree overcome, will always be interesting to the student of architecture in after generations,—showing those signs of growth that are always so charming. When that is found, the evidence of incapacity to conceive and to weld together at once a perfect whole is by all good judges accounted as mere dust in the balance. . . . . Let any man of special tastes and with well-defined wishes endeavour himself to give them substantial existence. Failure will be more honourable thus, than success with the assistance of an "eminent professional man"; who, though tried by a high standard of course a miracle of dulness, may by practice and pains be able to produce verisimilitude in a masquerade,—but only by the sacrifice of all that is really valuable,—in other words, of that special refinement belonging to the work of the "amateur" or lover of anything. . . . Any one possessed of much good sense would probably not ask advice from us, perhaps not ask it at all. Knowing that "a true artist works mainly to please and satisfy himself, and that this is really the only sound method of practice,"—he might be actually disposed to accord a generous confidence to——; but we really need not extend our remarks. Our whole meaning is surely by this time as plain, and at least as well known, to our readers as it is to ourselves.*

STONEHENGE, AND MAN AS AN ARTIST.

IN these days of rapid change, and in view of a so very uncertain artistic future, it is not a little interesting, and sometimes consoling, to go back in memory to primitive days and to simple ways of man's work, and to see how things were actually and in reality then done. We live in an age of printing and books, and to be civilised a man must be "book learned" and full of book knowledge and experiences; but the time was when books were not, and the knowledge and experiences of men were to be got, if got at all, from other sources than books. This may be fairly said to be a paper age in contradistinction to that old geological age which has been called the "stone age." Men now write upon paper, but then they wrote upon stone. The rude stone monuments of various countries take us far back into the past beyond the reach of books and printing, and even letters, but still not actually beyond *writing* of some kind or other, if it be but of the very rudest hieroglyphics or picture-writing. We have pondered a good deal on this interesting matter at divers times, and have still a few thoughts on it, and the result, crude as it is, and, indeed, must be, is, that any theory which makes all these works modern must be wrong. It may help towards the understanding of this matter if we call attention to one or two facts hardly hitherto noted. It may also afford a hint or two in modern practice. We may remind the reader first, and it is important to bear it in mind, that the history of human society may be broadly divided into three epochs or phases; the *savage* state, like that of the North American Indian of the present day; the *barbaric* state, like that of the Chinese and Japanese; and the "*civilised*," as it is termed, of which we may consider ourselves as a type, if not *the* type. But Nature does nothing in vain, and certainly gives away nothing. Some sort of equivalent is demanded for all that Dame Nature ever bestows. If the civilised man is a great gainer by the fact of his civilisation, we may be quite sure that he loses something by the change from the barbaric to the civilised. *Art*, for instance, has never flourished so entirely as among what have been termed *semi*-civilised or "*barbaric*" people. Outward and visible show, as expressive of inward thought and feeling, is always necessary in such a phase of human existence, and outward and visible show it is that creates art and perfects it. The savage state has art too, and sometimes very expressive art, but rude and unpolished, but still real and true. It has remained for an advanced civilisation to "*manufacture*" art, and hand it over to

* Some more hereafter.

the dead machine. But what is the gain, we may ask in passing?

The whole subject is not a little complicated, for not only must we distinguish between the "civilised," the "barbaric," and the "savage" states of human existence, and accurately define them, but we must consider as well that this primitive state of things and primitive stone building have come of many *natural* causes: geologically, from the facts of the existence on the surface of the ground, and so ready to hand, of the "boulders," or blocks of unhewn stone left there by the forces in operation at the *Glacial* epoch. No savage tribe of men, however rude, could be insensible to the influence and constant presence of those huge and isolated blocks of stone: *to see them was to utilise them* in some way or other. Next there was a theological cause at work, for these works were essentially Pagan, and that simply means that no authoritative revelation had been vouchsafed to the rude and simple men whose lot cast them into Paganism. Man was left to himself to find out, as Mr. Carlyle would say, "a something to wonder at," to adore, and to invent. A vast isolated block of rude stone in the centre of a barren heath would be certain, in the very nature of things, and in the very nature of the mind of man, to excite feelings of awe and wonder, as, indeed, they now do, and could not but become venerable and sacred. Next, and this is a most important consideration in such a rude state of society, there must be outward and visible evidence for everything, and for every thought, and hence it is that we find among all rude tribes of men a primitive and simple veneration for all natural and striking objects,—for stones, trees, water, rivers, even sand, the sun, and moon, and stars, indeed, almost every natural object has found somewhere or other its worshippers. To our mind this is a singularly attractive subject to contemplate; it is to get rid of one's prejudices, and to find a way for oneself, as these rude men were obliged to do. The earth, and what is on it, and the elements round it, are alike open to all to read as they will or can; and it would be difficult indeed to find a spot whereon to think out better such primitive and dark mysteries than among these colossal stones. People wonder why Stonehenge was built, but there is no need for wonder; it was, and must have been, *the natural expression of the minds of thoughtful though savage men.* Before there was amongst them any "architecture," in the usual acceptation of that word, there were the mental causes and necessity for it, and a feeling for some *constructed* work huge enough to fill the minds of rough men. Architecture became a want. Stonehenge is not peculiar to these islands, the huge stone circles are to be found everywhere, and they take us back not to the fifth or the sixth century, or to the tenth or the first, but to *prehistoric* times, far remote, indeed, from all written records, or even unwritten song and legend. In the very nature of the case it must have been so, for as soon as man on this earth began to think at all—and books are not necessary for this—he must have begun to express himself somehow or other in *material*. The thoughts and feelings of the very earliest of the race of men must have been much the same as our own, but differently expressed. We express our religious feelings through and by means of cheap churches, and, if that be possible, cheaper chapels, with a minimum of material and labour. The old stone circle men evidently thought no stones of memorial huge enough, and no labour long enough, through which to express their superstitions or their religions. And a very strange thought it is that as you go back in time and get nearer and nearer to "ignorance," as it is called, you somehow or other get into grander and grander architecture or building, if that be the better word, and you may thus fairly start from the cheapest and the flimsiest of modern improved church and chapel buildings, back to Middle or Dark Age cathedrals; to Egyptian and Hindoo temples; and from them to stone circles, and monolithic memorials. All true work is religion, says a modern prophet. *Laborare est orare.* Work is worship! Of such was Stonehenge; and it is a great subject for calm contemplation.

There is one other point worth a moment's thought, as it carries us back not only to the earliest simple stone monuments, but to the earliest written records, to stone "*writing*,"—it is that of some discoveries recently made in a remote corner of tropical America, wherein are to be found rocks covered with concentric rings and other characters typically identical with those found on British rocks. This guides us to a notion of old dates, for these identical markings go far to show that the men of America and the men of Britain were, at some enormously remote date, of the same race; and this could have been only at a time when the disposal of the land and water of the globe were somewhat different from what they now are. Dr. Berthold Seeman has given a most interesting account of these curious matters,—too long to quote,—in his book on "Nicaragua and the Mosquito Shore." To it we must refer the reader; but it may be interesting to note how soon man must have begun his *artistic* career. Nothing can well be ruder than these drawings or stone cuttings, carved on the smooth surface of rocks, and evidently meant as memorials,—writings,—the origin of writing indeed almost infinitely remote from this present time, but still identical with it; for writing is writing however it may be accomplished. There can surely be nothing more interesting than these records of a past time, so unlike the present, yet so like it; for man is always the same, with the same instincts and feelings, with the same soul and body to provide for. But here a thought occurs, and which may lead to some practical hint, for may not a great architectural lesson be learnt from rude and antique work? The primitive *houses* of those who built these huge stone circles were sufficiently rude, and were wanting, doubtless, in all those "comforts" on which the modern man so prides himself; in other words, the indoor life of the builders and thinkers of the Stone Circle Age must have been of the roughest, though not so entirely void of comfort as may at first view be supposed; but their outdoor life,—we are speaking, of course, of that part of it which made the stone circle a useful and practical necessity,—must at the same time have been characterised by grandeur and dignity of thought, and by a feeling for much that is always artistically interesting and attractive. The huge stone circle, as at Stonehenge, was built of the largest masses to be found, selected, as we must suppose, because they were the largest, and because by *size* only was that impressiveness to be found which the minds of our great, though rude, ancestors demanded. The aspirations of such men must have been great and noble, and have produced a truly noble architectural thought in true and massive material; and the lesson is,—can small works and small masses, however well or even artistically put together, produce the same impressive and sublime effect on the mind as great ones? We think not. Certainly the rude builders of Stonehenge and the stone circles thought so.

SANITARY CONDITION OF IRELAND.

A DEPUTATION, comprising members of the Irish Medical Association, the College of Physicians, and the College of Surgeons, waited upon the Lord Lieutenant, on Saturday last, to present a memorial, the object of which was to obtain a Royal Commission, through his Excellency's influence, to inquire into the state of the public health of the country, the working of the Medical Charities Act, and further to defer, if possible, the enacting of any system of sanitary legislation for Ireland until such a Commission had reported upon the subject.

From the views put forward by members of the deputation, it was shown that the existing sanitary laws applicable to Ireland were complex and to a great extent inoperative, and they were of opinion that a Commission was necessary and eminently calculated to form a sound basis for future legislation.

His Excellency thought that sufficient knowledge of the state of Ireland was already in the possession of the Government to frame a Bill on a similar basis to Mr. Stansfeld's measure, and he considered it would be impolitic to frame a Bill for Ireland until the discussion on the English measure had first taken place. After Mr. Stansfeld's was introduced, the Government, he said, would be prepared to state what they considered would be necessary for Ireland.

Dr. Stokes, who formed one of the deputation, and who is well known in Dublin as a leading physician, made a statement which seemed to take the Lord Lieutentant by surprise. He stated a known fact,—that for the last half-century or more, about every ten years a devastating epidemic took place in the sister country,—a state of affairs which, Dr. Stokes said, was quite unknown in England or Scotland, and nothing could be more important than that steps should be taken to investigate the history and reasons, and the measures requisite to check it. In answer to the query of his Excellency as to whether these epidemics were to be attributed to the prevailing sanitary condition of the country, Dr. Stokes replied that the deputation did not adopt any theory as to the production, but of one thing they were certain,—that public health is promoted by sanitary reform.

One of the reasons advanced by the deputation for the appointment of the Commission was that the voice of the medical profession should be heard prior to legislation. It was also disclaimed that the medical profession had any pecuniary or personal interest in the matter. "*They all held that preventive medicine was far beyond curative.*" This is a cheering admission, and, coming from such a man as Dr. Stokes, it has its worth, even in the eleventh hour, in the struggle of sanitary reform. The Lord Lieutenant promised finally to give every attention to the important statements laid before him.

THE DORÉ GALLERY.

AN important addition has been made to the collection of works by M. Doré, now exhibiting in Bond-street, in the shape of a very large painting, "Christ leaving the Prætorium." It is apparently 20 ft. by 30 ft., includes a very large number of figures, and will serve further to astonish those who know what other work this fertile painter has done in the five years during which he is said to have been engaged on the picture in question. The composition is striking. The figure of Christ, draped in white, and descending the stairs, forms the central point of the painting, and in all four corners, the high level of the buildings above permitting this, crowds of figures, here and there driven back by Roman soldiers, press forward to see Him. Looked at critically, much of it must be considered as mere scene-painting: some of the figures, especially on the left-hand side, are but caricatures (look, for example, at the man with the red hair and beard); still, it is a remarkable picture, and will, doubtless, attract, and deserves to attract, many visitors for some time to come. The most perfect work of the artist, the "Paolo and Francesca di Rimini," is still in the gallery.

THE ROYAL ACADEMY OF BELGIUM.

THE hundredth anniversary of the Royal Academy of Sciences, Literature, and Fine Art of Belgium, founded in 1772 by Maria Teresa of Austria, was celebrated at Brussels on Tuesday and Wednesday of last week, with considerable ceremony. The proceedings were inaugurated on Wednesday with a speech from the king, in which, with great felicity of expression, he welcomed the foreign visitors who had been invited to take part in the celebration. Three papers only were read each day, and these were chiefly of an historical nature, tracing the progress that had been made in Belgium since the institution of the Academy, and alluding briefly to the various distinguished men whose names were associated with it. On Tuesday the foreign visitors were entertained at a banquet given by the Academy, and on Wednesday the members of the Academy and their guests dined with the king at the palace at Laeken. The whole of the proceedings were of the most harmonious character, and the foreign visitors had every reason to be gratified with the reception they experienced. Special mention should be made of M. Quetelet, the permanent secretary of the Academy, who, by his energy and urbanity, contributed greatly to the success of the meeting. M. Quetelet is one of the oldest members of the Academy, his election dating back as far as the year 1820. He is the author of several works on scientific subjects, among which may be named a "History of the Mathematical and Physical Sciences among the Belgians," published in 1865; the "Meteorology of Belgium compared with that of the Globe;" and numerous essays, besides editing the Annals of the Royal Observatory of Brussels since 1834. The Royal Society of England was represented by Professors Owen and Miller; the Royal Academy of England by Mr. J. Prescott Knight, R.A.; the Institute of Architects, by Professor Donaldson, Mr. Edward I'Anson, and Mr. G. Alexander.

It is worthy of note that three of the earliest members of the Academy, Nathaniel Pigott, the Abbé Needham, and the Abbé Mann, were Englishmen settled in Belgium, and all three distin-

guished themselves by their observations in astronomical and physical science. Pigott was a friend of Dr. Maskelyne, and was employed by the Government of the Low Countries to fix the position of some of the principal towns by observation. The Abbé Mann was the first permanent secretary.

MODERN FRENCH ARCHITECTURE.

ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting was held on Friday evening, the 31st of May. In compliance with a request from the secretary of the Royal Institute of British Architects, a delegate to the approaching conference was elected to represent the Association,—the president, Mr. Rowland Plumbe, consenting to accept the office. A special meeting, for members only, was appointed for the 7th of June, in order to decide on the instructions to be given to the delegate. Thanks were passed to Mr. A. W. Blomfield, for the permission to visit his new church for the deaf and dumb in Oxford-street, now getting towards completion, of which some members availed themselves on Saturday afternoon, the 25th ult. The arrangements of the annual holiday, commonly known as "Mr. Sharpe's excursion," will be found in another column.

A paper was then read by Mr. G. H. West, called "Notes on Modern French Architecture," of which we give an outline. The subject was treated in three somewhat distinct, but of course allied divisions:—I. The usual student course of French architects. II. Memoranda as to general character and details of executed works. III. Conclusions as to the prospects of architecture in France.

I. The study in an *atelier*, the École de Beaux Arts, and system of academic teaching; the thorough, almost (for practical ends at least) over-refining, study of descriptive geometry; the opportunities for the acquisition of personal skill in the arts of drawing, in sciography, &c., were all first described. Then the training in design was treated of. It principally aims at the acquisition of facility in composing with the classical orders, putting before the student certain agreed upon models for imitation, aiding him to the study of the external form of everything accepted as of classical quality; requiring also constant and laborious imitation of the forms to which the eye and mind have thus become accustomed, till the power has been acquired by men of good natural ability of conceiving and delineating thoroughly the most wonderful imaginary compositions. The school of the new Louvre and the New Opera is now mainly in favour for original designs, which are, as usual, prepared to suit the supposed prejudices of the judges. The processes and the science of construction receive little attention, and, in the most finished delineation, a light tint of carmine expresses the hidden constructive detail. It is not the habit of those subjected to this training to design while constructing, or to construct while designing. The design is first completed, and then, if further steps be called for, the construction receives almost its first consideration. The highest honour attainable, the *Grand Prix* de Rome, gives the fortunate winner five years' study out of his own country; and he returns to enter on actual practice seldom younger than thirty, often at thirty-five years of age. The result of so laborious a preparation may be illustrated by an instance not altogether exceptional, in which, returning from Rome after his five years, the *Grand Prix* student was entrusted with a commission to build a house to cost about 1,500*l.*, and found himself obliged to ask with earnestness the counsels of a friend in practice as to the construction of ordinary doors and quarter partitions. The École Centrale d'Architecture was started to supply the defects of the Beaux Arts, but, from various reasons, is not now of much importance. The École des Ponts et Chaussées and the École des Arts et Manufactures give more distinct scientific training, and have, at least latterly, devoted special attention also to architectural design, producing a class of men calling themselves "engineer-architects," aiming at new applications of materials and a thoroughly scientific use of them. The teaching of M. Viollet-le-Duc, well known by this time in England by his "Entretiens," "Dictionnaires," &c., has a different point of departure from that ruling the École de Beaux Arts, and consequently promises different results. Treating architecture as the border-land between art and science, this teaching recognises the value and necessity of constant innovation, the advisability of using all materials, only under the guidance of right reason, to which every problem, new and old, must be submitted for solution,—not in the outward form, but in its informing spirit, will a true revival of Gothic be made. Its principles will be found to afford the surest help in dealing with the complex buildings and the very numerous materials which require often the first successful essay to be made to-day. Trained in M. Viollet-le-Duc's school, after experience at the École de Beaux Arts, Mr. West felt himself justified in expressing the sense of touching solid earth, that he had felt, when subjected to criticism, which dealt first with the requirements of actual life and with the use of materials, and looked further to the evolution of beauty therefrom, instead of looking only, or at least mainly, to the production of certain effects.

II. As to executed works, a repetition of the mass of details accumulated and recited in the paper will not be necessary. An instance will suffice, showing some of the character of much of the Parisian masonry,—one of the examples of the unconstructive character of their architecture. The *pierre tendre*, so largely used, could not be worked on the banker, and then hoisted, as is the case with the freestone used in London. It is, therefore, built into the work in block, and reduced by planes and scrapers to the required form. As, however, little care is taken to make the joints occur where good construction would require, and as the blocks used are of great size, in order to save labour in severing them, and working the beds and joints, the apparent design (what has been called the design of "superficiation") becomes a sort of scenic presentation. It has been the custom to pay the contractor by the cubic quantity of stone used, and by the area of visible face; the contractor is, therefore, liberal in his provision for the prominent architectural forms, uses some quantity of stone to waste, saves scaffolding, and at the same time too often scamps the beds and joints, and has as few of them as possible. After speaking of the Opera House, which he pronounced on the whole an architectural failure,—and a most costly one, seeing that 44,000,000 francs have been expended on it, and the finishings are not yet begun,—notices of the works of other architects followed; selections for commendation, as among the best modern French work, being made of some of the productions of MM. L. Vandoyer, L. J. Duc, Baltard, and Duban, with reference on occasion to photographs, &c., exhibited at the meeting. Judging by the prevalent feeling, as far as he had been able to gauge it, he considered it most improbable that a Gothic revival at all resembling that of England would establish itself in France. Associated indissolubly with the feudal times, from any sympathy with which the bulk of the people are wholly severed by their every sentiment, it has been cast aside with the rest of those things that might, if living to-day, remind the people too pointedly of their ancestral slavery. The tendency is now towards a purer and simpler style than has of late prevailed; but there is no likelihood that, however much the work of the future may be leavened by the influence of Gothic, there will be any recurrence to its special forms.

III. As to the immediate present and the future of architecture, the vile and meretricious style of the Second Empire, the writer looked on as wholly done with. The excellent artistic feeling, displayed in many of the details of otherwise by no means successful works, shows no sign of exhaustion. Many French architects have aimed at being mere decorators, and at the production of ostentation and surprise. When they uniformly regard architecture as a science to start with, not to finish with, there will be effected a revolution in their executed works, and changes in their school of art-teaching. The words of Bacon "On Building" are true of the buildings of to-day: they "are built to live in, and not to look on; therefore let use be preferred before uniformity, except where both may be had." Let architects anywhere forget this, and they may expect to be classed with alchymists and archers, and other fossil relics of a bygone age.

Mr. R. P. Spiers said that his conclusions differed from those of Mr. West. He considered the system of academical education worthy of all the advocacy he and others had given it. The "École" in Paris supplies the finest preliminary education that can be had. While requiring to be supplemented by practical work, and by additional attention to the economy of construction, that education thoroughly and quickly trains the student to the practice of design, and tends to make his work perfect in proportion and drawing; thus starting him at a point to which many English ones, with the no-system here pursued, never attain at all. The *principles* of construction are taught; but teaching by professors not in actual practice certainly tends to take away some of the useful reality and solidity of instruction. Any training can succeed only in what it aims at; and he thought Mr. West had been led unduly to depreciate the French academic teaching, by considering it as the sole education of the French architect; who, on the contrary, can at any time enter an office, and work at and study his art in its actual practice. In England, on the other hand, at least till lately, little effort has been made towards providing, for the ordinary pupil in offices in London, any advantages of the same kind that have been long the privilege of the students in Paris. After some remarks on the immense power and talent evinced in portions of the design and in the details of the Paris Opera House, Mr. Spiers was succeeded by other speakers.

In reply, Mr. West stated that he had set himself the task of pointing out some of the defects and results of a system, which, however excellent for some purposes, failed from want of attention to the first element of real success in architectural design — constructive decoration. The "design first, build afterwards," of the French École, could not deal properly with the difficulties of modern building. At the same time, he did not fail to recognise the genius, the enormous talent, and many really admirable modern productions of the French. That side of this question would also deserve a special paper. On this occasion, he had devoted himself to what could be said on the other side,—to consideration of the defects, in spite of which good men were trained, and successes were achieved.

ANOTHER ALPINE TUNNEL.

DIAMOND BORING AT CLIFTON.

THE works of the railway between Switzerland and Italy, *viâ* the St. Gothard Pass, are in progress, and an experimental portion of the Great Tunnel is to be driven, we hear, by the diamond boring-machine of the company, of which Captain Beaumont, R.E., M.P., is chairman. This machine bores either vertically or horizontally, and at any required angle, but with a continuous straight bore, of course, at the inclination adopted at the beginning of the boring. The machine has achieved great success, from the rapidity and certainty of its action, in "prospecting" for iron, stone, and coal in the north-eastern and north-western counties. It is now also employed upon the tunnel of the Bristol Port and Channel Dock Railway. This tunnel, which is more than a mile long, is through the hard mountain limestone, under Durdham Downs, Clifton. At the Stanghow Iron Mines, Cleveland, the diamond borer reached a depth of 689 ft. 4 in., between the 7th of October and the 14th of December last, a work for which two years would not have more than sufficed if the stratification had been pierced in the ordinary method by hand. In its work at Clifton, the borer is under totally different circumstances. In prospecting one vertical bore-hole is sufficient, but in the horizontal boring for the tunnel headway, the machine drills six or eight holes at a time, the drills making about 200 revolutions per minute, and advancing about 2 in. in that time. The drills are steel tubes, with an annular ring or crown upon the face, into each of which eight diamonds are set, in such positions as to work out a circular groove, leaving a clean core of the strata pierced in the inside of the tube, that gives precise information as to the nature of the material passed through in every part of the boring.

As in the working of the Mont Cenis tunnel, so it is at Clifton, compressed air being employed as a motor, but in quite a different manner. M. Sommeiler and his co-labourers at Fourneaux employed the compressed air for percussive action on the drills, but at Clifton the air is employed to obtain continuous pressure, which, with the rapid revolution, effects the work. The machine in which the drills work is so constructed that they command every part of the surface of the heading, which is 10 ft. by 8 ft. The holes are drilled in perpendicular rows, the two rows in the middle approaching each other at their inner ends, so that the first portion of the rock that is blasted is wedge-shaped. After

an opening has been made in the middle, the portions of rock on each side are blasted inwards, and the remainder of the tunnel, to its full size of 30 ft. by 20 ft., is worked out in the ordinary method by hand. The boring-machine is executing the work at about five times the speed attainable by hand labour. The bore-holes are drilled to about 4 ft. in depth, the *débris* being washed out, and the drills kept cool by streams of water under pressure that play continuously upon the face of the workings. The core left by the machine is about an inch in diameter, and the total diameter of the bore-hole about 2 in. Dynamite is the agent employed for blasting, and does its work very satisfactorily. The machine has been at work for three weeks daily; the diamonds have given no signs of wear, or of getting loose in their settings in that time.

THE NEW BELL FOR COLOGNE CATHEDRAL.

In the *Builder* of last Saturday is a paragraph on this subject, in which it is stated that "the bell will be 17 ft. high, and 13 ft. diameter at the base."

Now, surely this is a mistake on the part of some British or foreign copyist. Be it as it may, I beg to say that if a bell be 17 ft. high, and only 13 ft. diameter, it can never yield anything like a fine tone.

I may take occasion to remark that other erroneous statements respecting the bell under notice have lately appeared in a daily newspaper. THOMAS WALESBY.

COMPETITIONS.

Ipswich.—Four architects sent in designs for the proposed new church in St. Matthew's parish, and the committee provisionally accepted those of Mr. James Butterworth. The estimate of the architect for carrying out the building he had designed was 3,000*l.*, but on a closer examination it appeared that the cost would be nearer 5,000*l.* than 3,000*l.*, and the committee, having no hopes of raising such a sum, withdrew their acceptance of the design.

SCHOOL BOARDS.

London.—At the last meeting, with reference to the three designs selected for Battersea-road, Kender-street Hatcham, and Mary-street Bromley, the committee gave a table showing the cubical contents and the estimated cost in each case:—

	No of Children.	Cubic Contents.	Estimated Cost.	Cost per Child.	Cost per Cubic Foot.
(i.) Battersea-road	720	240,000	£5,850	£8 2 6	5·85d.
(ii.) Kender-street, Hatcham ...	720	245,658	5,521	7 13 4	5·39d.
(iii.) Mary-street, Bromley ...	720	Not given.	5,300	7 7 2	—

In order that no time may be lost in preparing designs for further schools, the committee have gone over the list of sites which have been scheduled. In each of the three following cases there is no doubt about the precise area and figure of the site which will be ultimately secured. They accordingly recommend that in each case there be a competition of four architects, and that it be referred back to the Works Committee to select that number of architects, and to submit the plans prepared to the Board: 1. Monnow-road, Old Kent-road, for 1,040 children; 2. Hunter-street, Old Kent-road, for 1,040 children; 3. Gloucester-street, Stepney, for 1,200 children. This was agreed to by the Board.

Barnsley.—A letter was read from the Educational Department approving of the plans for the proposed schools in Park-road, with the exception of the height of the walls, which they considered too lofty. Messrs. Wade & Turner, the architects, agreed to reduce the walls 2 ft., and the plans were ordered to be returned for final approval.

Scarbro'.—The following report of the committee on the designs for the Falsgrave Infant School was unanimously approved and adopted: "Your committee have carefully examined the plans referred to them, and beg to report that, in their opinion, those submitted by Messrs. Stewart & Bury, of Scarborough, and by Mr. Wm. Watson, of Wakefield, are the best adapted to the requirements of the Board. The committee therefore recommend that from those two designs the final selections should be made by the Board." It was then resolved that the plans submitted by Mr. Wm. Watson be accepted, in preference to an amendment in favour of Messrs. Stewart & Bury.

Westbromich.—At the last meeting, a communication was read from the Education Department, stating that the total school accommodation required was for 9,393 children. The number of children for whom no accommodation was provided was 1,026. To meet that deficiency, her Majesty's Inspector suggested that a new school, of a superior character to the schools already existing, should be built at Greet's Green, for 350 children, and another at Holloway Bank (on the Wednesbury-road), for 200 more. The adoption by the Board of the Mayor's Green School, it was considered, would be open to objection, owing to its close proximity to the schools in Walsall-street and Bratt-street. The matter was referred to the General Purposes Committee.

LIBRARY BUILDING, NEW YORK.

THE building occupied by the Library, and erected from the designs of Mr. P. B. Wight, architect, is 75 ft. wide on Montague-street, and 92 ft. deep. The public entrance is in the centre, and is approached by steps of Ohio stone, flanked by stone parapets and newels. The porch is arched with Ohio and Haverstraw stone, and the front of it supported on columns of polished Gloucester granite, with bases and carved caps of Ohio stone. Over the porch, the walls of which are brick, is a stone platform and parapet with carved gargoyles, crockets, and eagles at the angles. The front of the building is faced with Philadelphia brick, and trimmed with the two kinds of stone above mentioned. It is surmounted by three gables in the roof, which have stone copings and wrought-iron finials. The front part of the roof is covered with Peach bottom slate.

From the main entrance, passing through the vestibule, which is separated from the main hall by a screen of oak and plate-glass, and enclosed on the outside by wrought-iron gates, the visitor enters a spacious hall, floored with encaustic tiles. In front is the entrance to the general reading-room, to the left is the ladies' reading-room, and to the right is the office, behind which is the main stairway, making an L with the main hall. This story is 16 ft. in height. The general reading-room occupies the greater part of this floor, and has windows on both sides. Unobstructed light for the rear of the buildings is thus obtained from the yards of the adjoining buildings on both sides, which are the property of the Library Association. The reading-room is furnished with reading-tables of oak and walnut (A), and racks for newspapers of all sizes. The central portion at the back of the room is railed off, and contains the desk for the attendant (C), and the case for files. This case is also intended to contain books of reference for the reading-room.

Three open arches connect this room with the ladies' reading-room, which is carpeted, and furnished with tables, chairs, and sofas. It has three windows looking upon the street.

Under the platform of the main stairway is a ladies' retiring-room, and in the panel work beneath the first flight is a door opening upon the stairway to basement. The main stairway from first (or ground story) to second and third stories is of solid oak, and finished without plastering on the under side.

The second-story hall is similar to that of the first story. The entrance to the library is over that to the general reading-room, and the library occupies the same space on the floor as that room, but is two stories in height, and occupies the whole space up to the roof, having a gallery on a level with the third story. The lower floor of this room has a central public space, in the middle of which is an opening to afford additional light to the centre of the general reading-room, surrounded by an iron railing, against which is a permanent reading-table (A), supported on wrought-iron standards. The alcoves are railed off, and the divisions between them are marked by the wooden columns which support the gallery and roof. The whole library is lighted by a large skylight of wrought iron and plate glass in the roof, and additional light is afforded to the deep alcoves at the ends of the room by means of side windows. The alcoves contain two tiers of cases. The second tier is surrounded with light wrought-iron balconies, which are reached by straight stairs, also of wrought iron, placed in every alternate alcove. The gallery round the library-room, which is at present used only for storage purposes, is intended to be eventually arranged for books, in the same manner as the main floor, and will have the same capacity. It is approached from the main floor by three circular iron stairways (E), and has independent entrances from the third-story halls. The library has shelves for 60,000 volumes on the lower floor, and will accommodate double that number when the gallery is shelved and finished.

The conversation and book-delivery room is on the west of the second-story hall, immediately over the ladies' reading-room. It is connected with the library by a large arch opening into the south-west alcove, in front of which is a counter extending across the room, over which books are delivered to members.

Across the hall, on the east side, is the meeting-room of trustees and directors. This room is carpeted and appropriately furnished. On the third floor over the book-delivery and trustees' rooms, are two class-rooms. The attic is as yet unfinished, but will probably be fitted up as a school of art.

The private entrance to the building on the basement floor, at the east side, connects with a private hall and stairway from that story to the attic, which is for the use of officers and attendants, and inaccessible from any portion of the building open to the public. This stairway is supplemented by a lift, or elevator (D), which passes through all the floors, and is used for the transmission of books, coals, and other heavy matter to the upper floor. Alongside of the basement entrance is the bindery, and on the west side of the basement are the janitor's rooms. The whole of the rear basement, under the reading-room, is used for the heating apparatus and storage of fuel. The coal is brought in, and ashes are removed, by means of a railway connecting a vault under the side-walk with the cellar.

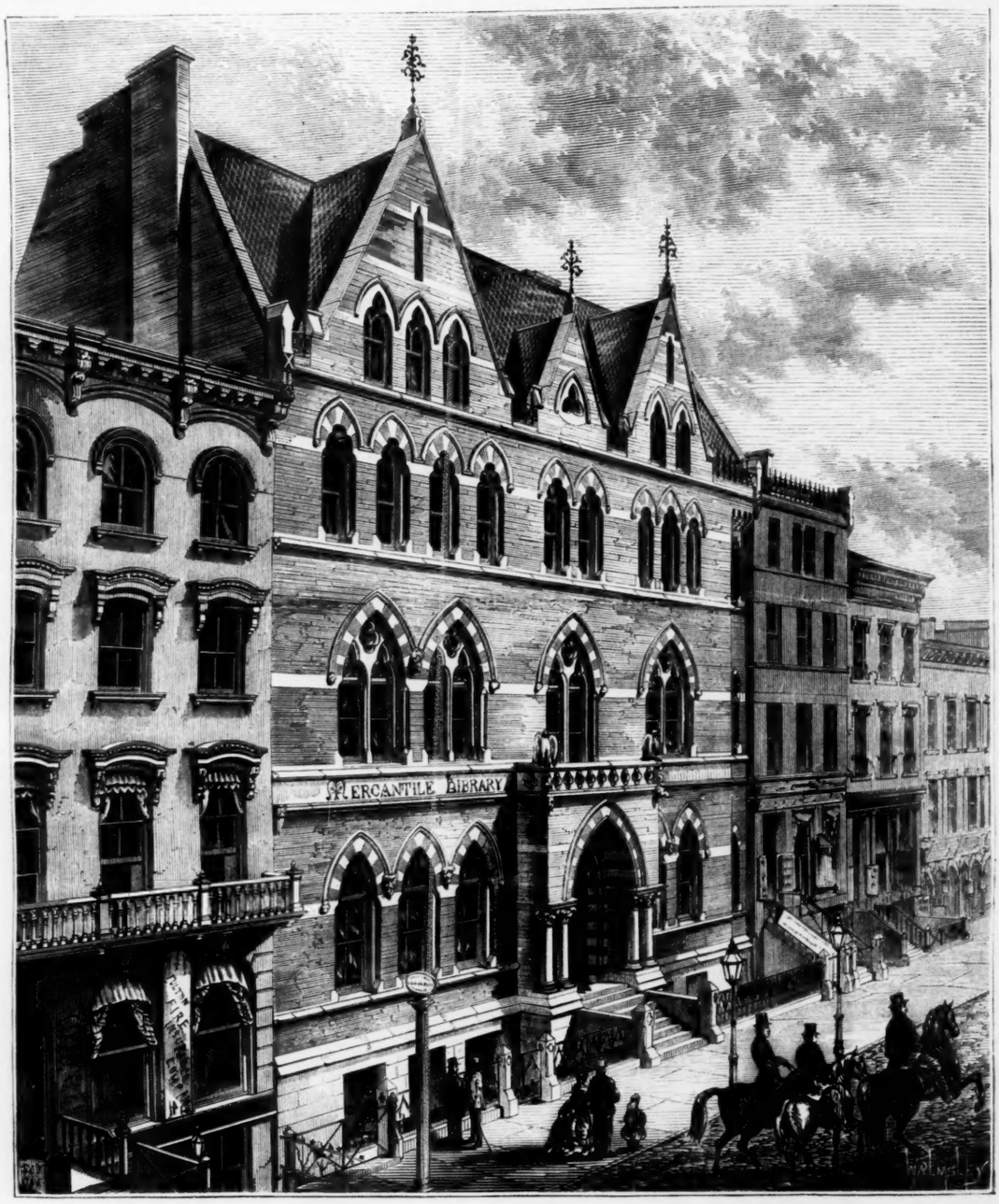
The closets are under the entrance steps. The janitor's rooms are supplied with hot and cold water, and water is supplied to all the principal rooms, which contain basins and water coolers. Provision is made against fire by means of fire-plugs, on the basement, first and second stories, to which the hose is always secured and ready for use.

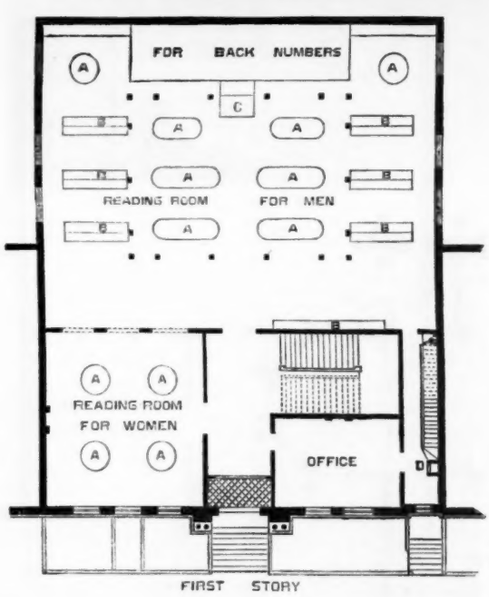
Particular attention has been given to the matter of heating and ventilation. The heat is supplied by one of Baker, Smith, & Co.'s safety pipe boilers, of 40-horse power. All the fresh air required for the rooms of the first story and the main hall, being those in which the greatest number of people congregate, is introduced through two openings on the sides of the building, and passes through radiating coils suspended beneath the floor, over which are iron gratings. The air is discharged through ventilating flues in the walls, which have registers both at the floor and ceiling. The library is heated by eight radiators placed under the small stairways in the alcoves, four of which are supplied with fresh air brought through registers in the sides of the building. All the other rooms are heated by direct radiation, and ventilated by open fireplaces and other flues.

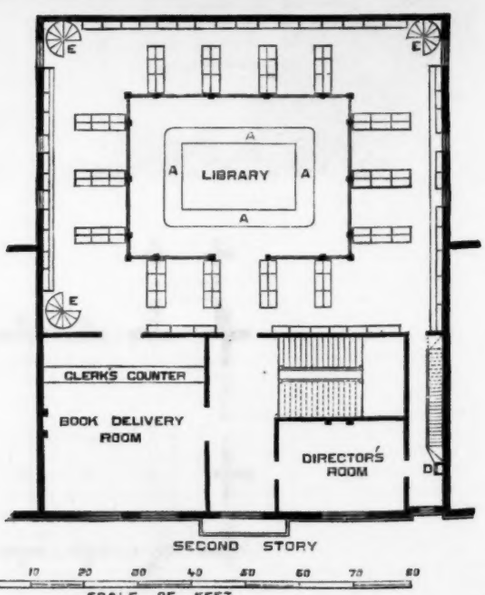
The building is lighted at night by gas, which, in the large rooms, is distributed as much as possible, in order to avoid shadows. The gas fixtures and furniture have been mainly designed by the architect to accord with the architecture of the building.

The architecture is thirteenth-century Gothic in style, modified to suit the necessities of modern times. Wrought iron has been used nearly everywhere in preference to cast iron. The walls and partitions are mainly of brick, and in the first and second stories entirely so. The floors are of yellow pine. The woodwork of the hall and stairway and of the doors is oak; that of the rest of the building is of white pine, and painted in parti-colour. All the columns used in the building are of white pine, and the construction is shown throughout. The plastering is what is called "sand finish," and the walls are now being decorated in polychrome from designs by the architect.

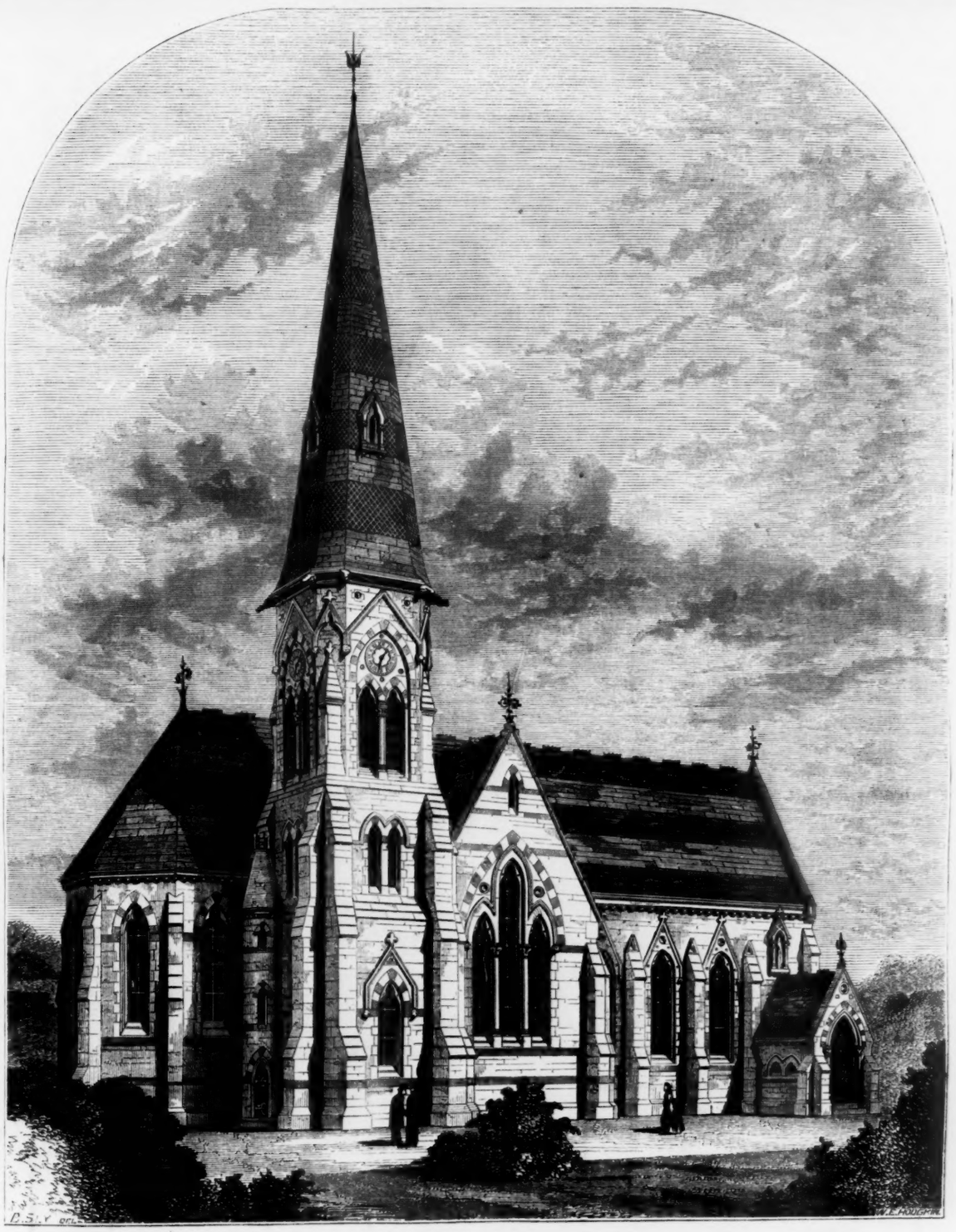
The contractors are:—John French, mason; Jeremiah Van Riper, carpenter; Jacob Outwater, iron; Armstrong & Blacklin, plumbing and gas-fitting; M. L. Curtis & Co., gas fixtures; Wm. S. Hunt, furniture; Miller & Coates, floor tiles; Henry Sharp, stained glass; and Baker, Smith, & Co., heating apparatus.

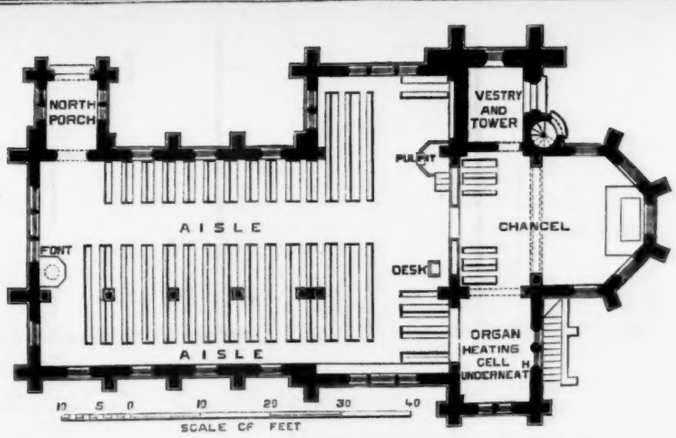






THE LIBRARY BUILDING, NEW YORK, U.S.—MR. P. B. WIGHT, ARCHITECT.





ENGLISH CHURCH AT THE HAGUE, IN HOLLAND.—MR. H. H. VALE, ARCHITECT.

ENGLISH CHURCH AT THE HAGUE, IN HOLLAND.

THIS church, of which we give the ground-plan and a perspective view, is now in course of erection, for the use of the members of the Church of England resident at or visiting the Hague. It is built at the entire cost of Mr. John A. Tinne, Briarley, Aigburth, near Liverpool, and is erected in memory of his family, which is of Dutch extraction, and especially of his grandfather and father, who were natives of the Hague, and resided there.

The want of a permanent place of worship for members of the Church of England at this place has long been felt. For some years past they have occupied a wooden structure, now going to decay, and in an inconvenient situation. The position of the new church is on the south side of a handsome square, called "Van den Bosch," adjoining the Bezuiden-hout, well known for its many attractions, being on the side of the great wood, and contiguous to the Netherlands Railway and the Belle Vue Hotel. The site is not likely to be encroached upon, as there are pasture-fields open to the country behind it; and it occupies nearly the whole of one side of the Van den Bosch-square. Besides the land appropriated to the church itself, an additional space next to it has been secured, upon which a parsonage, school, or other building in connexion with the church can be erected, should such be hereafter thought desirable. The trees shown in the view are by no means ideal, but exist in reality, and are to be preserved.

The materials of which the church is mainly built are such as the immediate neighbourhood furnishes. A simple treatment has been adopted, and, in consequence of the difficulty of obtaining stone in Holland, tracery has been avoided, and natural stone used for the plinth of the building only. The operation of preparing the foundations is peculiar in this district, which possesses merely a substratum of bogsoil. A depth of about two yards being excavated, the soil is removed and sand filled in, which is brought in barges by canal, a distance of several miles. Upon this material the foundation-walls are built, of great thickness, up to the finished ground-line; by this means the necessity for the use of piles is entirely obviated. All the new residences in the Van den Bosch-square have been built in this manner.

The main walls are built of local bricks, in several shades of colour, from deep red to light buff. The bricks are very small, and only about 2 in. in thickness, and require great care in laying, but make very beautiful work when finished and pointed. The bricklayers are very careful workmen, but slow, which, together with the smallness of the bricks, greatly increases the cost of workmanship, it being more than double the price of English work. A sober tone of colour has been used for the main walls, with arches and bands of deeper colours. The parti-coloured system of brickwork is not new to the Hague, as there are evidences of this kind of treatment in some of the ancient public works dating from the sixteenth century, which may have been introduced by the Spaniards, as the treatment possesses something of the spirit of Moorish architecture, and such as has been recently adopted in England from Italian examples.

Many old brick buildings, both in Holland and Belgium, possess features resembling the "brick and marble" style of Italy, with radiating parti-coloured arches. A curious instance of this may be still detected in Antwerp, in the walls of the old Spanish Custom-house, built originally in coloured brickwork, which was doubtless the fashion of the day, and subsequently coated with cement or plaster, through the cracks and broken coating of which the richly-coloured bands of the original work may be seen; and probably the walling of the Spanish building, if exposed more fully, would present many interesting features.

In the church under notice, local materials have been principally used, but the slating in two colours has been sent from Wales. The decorative materials for the interior, such as granite pillars, serpentine shafts in chancel window reveals, encaustic tiles, the reredos, pulpit, and reading-desk, in Bath stone, and all the stone carved capitals and corbels have been sent from England; also the stained-glass windows, the ornamental and other ironwork, the pitch pine benches and roof-principals below the carved boarding. The small quantity of artificial stone used externally in quoins, sills, and dressings, is of the local manufacture, called "Lindo's patent stone," which is said to stand the climate of Holland better than any natural stone, and is indurated under water for 100 days, after coming from the moulds. It has been largely used for monumental works in the country.

The church consists (as will be seen on reference to plan) of nave, single side-aisle, transepts, and chancel, with organ-chamber, vestry in tower, and porch. The roofs are boarded to a curved shape, and divided into panels by moulded ribs. The whole of the pitch-pine has been worked in England, the rest of the joiners' and carpenters' work has been done at the Hague.

The contractor is Mr. Van Zanten, Van den Bosch Straat, The Hague. The English contractors are Messrs. Holme & Nicol, of Liverpool. Mr. Joseph Rogerson, of Liverpool, is the carver, and has also supplied the pulpit, reading-desk, font, and reredos, and all the granite and marble used in the church. Messrs. W. H. Sullivan & Co., of Liverpool, are doing the stained glass. Mr. W. Orme Carter has furnished the slates; and Messrs. Maw & Co. provided the encaustic tiles.

The whole of the works are from the designs and specification of Mr. H. H. Vale, architect, Liverpool; and Mr. J. Waldorp, engineer-in-chief of the Waterstaat and Government Railways of the Netherlands, has kindly taken the local superintendence of the building, which is under contract to be finished during the ensuing autumn.

THE TRADES MOVEMENT.

London.—The operative house-painters and decorators of London have organised a committee and delegate meeting, for the purpose of co-operating with the carpenters and masons, with a view of securing the nine-hours system. They ask 8½d. an hour as a *minimum*; the *maximum* to be fixed by arrangement.

Croydon.—At an adjourned meeting of the carpenters and joiners a long discussion took place, and ultimately it was resolved that the masters should be asked to give 7½d. per hour on and after the first week in July next, and that a deputation wait upon each employer for an answer. Some of the men present were very sanguine that ere long 8d. per hour would be the price obtained, but thought that 7½d. should be first got, and eventually the former sum would be easily secured.

Ipswich.—The arbitrators, Mr. T. D. Burroughes and Mr. J. Orford, jun., on the part of the masters, and Mr. F. J. Bugg and Mr. Watts on behalf of the men, with Mr. J. Worlledge as umpire, are to sit at the Town-hall to dispose of the dispute.

Bristol. — The carpenters and joiners have offered to refer their difference with the masters to arbitration, and abide the result. The men ask for a reduction of the hours to 50½ per week, and a rise of wages from 6½d. to 7d. per hour, and increased pay for overtime. The masters offer to reduce the hours, and a rise of ¼d. per hour, viz., to 6½d., but will not alter the price of overtime.

Bodmin.—The master builders, acting under the pressure put upon them, have conceded the nine-hours limit to their men.

Halifax.—A numerous meeting of carpenters and joiners has been held for the purpose of hearing the decision of the employers on the application of the men for an increase of their wages from 27s. to 28s., and of a reduction of the hours of labour from 52½ to 50. The Secretary read the answer, in which it was stated that the employers would grant the reduction of hours, but declined to give the increase of wages. After some discussion it was unanimously resolved to adhere to the original terms, and as the six months' notice given on the 13th of October last expired on the following day it was resolved to cease work at that time. It was stated that Mr. Joseph Bedforth, of Horton-street, had acceded to the terms, and that five or six other employers were favourable to the proposition of the men.——The masons of Halifax have had their request complied with by their employers for an advance of 1s. in wages and an hour less on Saturdays.

Dumfries.—The masons' strike in Dumfries, which has lasted for six weeks, has terminated, and those of the men who had not left for other towns have resumed work. The dispute originated in the master masons employing slaters to do pointing work which could not be done when buildings were erected in winter. The masters have now agreed that all new work shall be done by masons; and when, from exceptional causes, masons refuse to do it, the matter is to be referred to the Operative Lodge. The masters, at the same time, agreed to grant the nine-hours limit, but without any rise of wages. Their former offer was that the shorter hours should commence on the 1st of August, and ½d. an hour of advance.

Leeds.—The master bricklayers have conceded the 7½d. per hour demanded by the men. As soon as the question of overtime has been settled the men will resume work.

STRIKE IN THE BUILDING TRADE.

SIR,—The strike which has already commenced in London, so far as the carpenters and joiners are concerned, seems quite unjustifiable, looking at surrounding circumstances. The hours now worked are 56½ in summer, and 50½ in the winter, or on an average of about 54 hours per week. The engineers have agreed to 54 hours per week all the year round, so have the printers and other trades. The carpenters now ask 51 hours in summer, and when the short days of winter are taken into account, there would be an average of about 48 or 49 hours per week.

Can the engineers, who are an intelligent body of men, consistently support a movement in direct opposition to their own rules? I think not, nor do I think the general public will do so. The workmen of Ipswich (as I see by the papers to-day) have agreed to 56 hours per week. If the building artizans had asked for a slight increase of wages, I could have well understood their object, but as the present demand would only increase their pay to the extent of 7d. *per week*, the present strike seems really got up for the sake of Striking. A MASTER BUILDER.

WE beg to contradict the statement, as reported in the daily papers, at the meeting of the Society of Carpenters and Joiners, that we had locked out our men before the final decision of the master builders. The facts are, we were compelled to discharge the whole of that trade on one job, through some conspiracies between the men, and their maliciously cutting up setting-out rods, and causing a general disturbance, beyond control. PERRY, BROS.

SIR,—Will you kindly allow me to make a few remarks on the nine-hours movement, or the threatened strike in London? I observed in your paper a letter from a "Master Builder," where he distinctly states the carpenters and joiners, if they do strike, it will be for 12½ per cent. in wages, and that alone. I beg most emphatically to deny that, as the reduction of the hours of labour is far more thought of and discussed than the subject of the wages; and I feel convinced, according to the amount of labour done by machinery, there must something be done to meet the demands of the operatives, carpenters, and joiners, otherwise we shall still have hundreds of our fellow workmen walking the streets in search of employment; while, if the hours of labour be reduced, that will be one step toward attaining the object of finding labour for more. One thing I fully believe, if the employers would consent to the reduction of the nine hours, and an advance of a halfpenny per hour at the present time, with the firm guarantee of the other halfpenny per hour at the end of the six months, which will then be 9d. per hour, it would be accepted. In the meantime it would enable them to complete some of their works already in hand, and they would at the same time be able to send in any fresh tender in accordance with the advance; and I think the public at large would be satisfied to pay the extra money if they themselves were convinced that the employers, one and all, were paying that rate of wages. One thing, I doubt much if we could depend upon them all: some, I feel satisfied in saying, would fulfil their promise. If this rule was brought forward and carried out, I think it would put an end to the strike; and, sir, I beg pardon for taking up so much space of your valuable paper, only I do not like the "Master Builder," as he called himself, endeavouring to make the public believe that we want an advance of wages, and not the time; and that working men are always in the wrong. I think not this time. I feel justified in saying that, instead of sixteen men at work ten hours, and four walking the streets, to have the twenty men working nine hours, or even less, is nothing more than just and honest. W. M. H., Carpenter & Joiner.

GENERAL CONFERENCE OF ARCHITECTS.

THE programme of proceedings announces that the opening meeting will take place at eight p.m. on Monday, June 10th, and will be followed by other meetings on the 11th, 12th, and 13th. The proceedings will terminate on the 14th with a public dinner, to which non-professional guests may be invited.

All members of the Institute will have the right of attending the meetings. Other practising architects (British or foreign) who may desire to attend, are requested to apply at once

for cards of admission to Mr. C. L. Eastlake, secretary of the Institute.

The following members of the Institute have been appointed to act as hon. secretaries to superintend the arrangements necessary for each subject or section, viz. :—

Professional Practice.—E. I'Anson, fellow; T. Roger Smith, fellow; J. D. Mathews, associate.
Architectural Art.—Professor Kerr, fellow; T. Talbot Bury, fellow; Thos. Wells, associate.
Construction and Materials.—Professor Lewis, fellow; Edwin Nash, fellow; E. W. Tarn, M.A., associate.
Exhibition of Practical Drawings.—C. C. Nelson, fellow; J. Norton, fellow; H. L. Florence, associate.
Arrangements for Public Dinner.—Horace Jones, fellow; O. Hansard, fellow; F. Marrable, fellow.
Arrangements for Visits to Public Buildings.—T. Roger Smith, fellow; W. Papworth, fellow; T. H. Watson, associate.

MATTERS TO BE DISCUSSED AT SECTIONAL MEETINGS.

Professional Practice.—1·30 p.m. Tuesday, June 11th; Thomas H. Wyatt, president, or George Godwin, F.R.S., F.S.A., in the chair. Report of the Conference Committee on Professional Charges; report of the Conference Committee on the Employment of Surveyors; on "Esprit de Corps," by T. Roger Smith, fellow.

Architectural Art.—8 p.m., Wednesday, 12th June; Sir M. Digby Wyatt, fellow, in the chair.—"On Modern Church Architecture in Scotland," by John Honeyman, esq.; Report of the Conference Committee on Competitions* (with a draft form of conditions and notes of various members thereon).

Construction and Materials.—2 p.m., Thursday, 13th June; Sir William Tite, C.B., M.P., F.R.S., Past-President, or Horace Jones, Vice-President, in the chair.—"On the Selenitic Method of Treating Lime," by Major-Gen. Scott, R.E., C.B.; "Notes on the Recent Conflagration in Paris," by R. W. Edis, fellow.

Final Meeting.—An adjourned meeting will be held (if necessary) at 11 a.m. on Friday, 14th June.

Delegates from the following Architectural Societies are expected to attend the Conference:—The Royal Institute of Architects of Ireland, the Architectural Institute of Scotland, the Glasgow Institute of Architects, the Glasgow Architectural Society, the Birmingham Architectural Society, the Liverpool Architectural Society, the Manchester Society of Architects, the Northern Architectural Association, the Nottingham Architectural Association, the Sheffield Architectural Society, the London Architectural Association.

FIGHTING FOR THE CHAIR AND MEANING THE TABLE.

THE office of Chief Artificer, or, in mundane words, Town Architect of Juteopolis, was submitted to competition a few days ago, under the auspices of the provost, bailies, and councillors. The candidates, four in number, having duly submitted their diplomas, the corporation proceeded to a decision. Now it so happens that for the last two years there has been a feud in that corporation on the subject of high and low heeled shoes, and this has accordingly divided it into two distinct parties. The advocates of high heels, successful last year in securing the smile of collected national wisdom on their efforts; their opponents managed this year to provoke that smile into a frown, and obtain imperial authority for low heels.

Glowing with victory and smarting under defeat, the two fashions ranged themselves on their respective sides; and as the office of Chief Artificer was a comparatively unimportant one, merely relating to the due administration of valuable town property, and other equally insignificant matters, it was determined by common consent that the choice should be considered as a contest of high and low heeled shoes, and be settled accordingly. One of the candidates having no nominator, was set aside; the senior and most competent withdrew, on hearing of "certain circumstances" (the impending battle of the fashions, probably); the contest was now, therefore, between the protégés of each party. The battle commenced, and high-heels were slain; the senior candidate, who had just withdrawn, was thereupon ruthlessly seized by a high-heeled bailie, set erect and confronted with the low-heeled champion. But too late; he was neither blue nor yellow, simply an ably-qualified candidate for the office, and as such had no chance.

Need we say that low-heels won, and the provost and council went their way rejoicing or sorrowing, as the case might be. There were many aching heads on restless pillows that night, and in the troubled dreams of high and low heeled dignitaries alike, a vision of Dick Whittington mournfully touched the steeple bells, and evoked the simple but monitory chime,—

"Please to remember the coming November,
And the City of Jute that was sold."

B. C.

CAPT. SEDDON'S PAPER ON TESTING MATERIALS.

SIR,—Permit me to call attention through your columns to an error fallen into by Capt. Seddon, R.E., in his paper on the "Testing of Materials," read before the Royal Institute of British Architects, and partly reproduced in your paper of the 31st ult., in which he alludes to a discrepancy between the transverse strength of English oak and its tensile strength, as given in Molesworth's "Pocket Book" and Hurst's "Architectural Surveyor's Handbook." Capt. Seddon appears to have taken the figures for tensile strength from an old edition of Molesworth's book, and applies them to the rule for transverse strength in mine. If he had used recent editions, or had compared the figures given by myself in both cases, he would not have found the difference so wide as he endeavoured to make out.

Again, he calls attention to the imperfection of the formula for the transverse strength of wrought-iron girders given in my Hand-book, p. 12, as being misleading. Capt. Seddon ought to have known that the formula he refers to is the well-known formula of Sir Wm. Fairbairn, and that which he proposes to substitute is only a modification of the equally well-known formula used by civil engineers for large girders, but which is not a whit less conventional nor misleading than the other. This any one can see for himself, by applying both to girders broken for experiment.

Capt. Seddon appears also to have overlooked the fact that pocket-books are intended only for those who have had some previous knowledge of the subject, and for whom common-place explanations are unnecessary.

J. T. HURST.

* The subject of this report was transferred to the Sectional Meeting on Architectural Art, in order to leave time for the consideration of the reports from the other Conference Committees at the meeting devoted to professional practice.

A GLAZED SURFACE.

I BELIEVE that common window-glass may be used for facing walls, if cut into geometrical shapes, as quarries, squares, hexagons, triangles, &c., and cemented on the plaster by some silicate cement. Any desired pattern could be produced on the glass in vitreous colours, and very cheaply, if the demand were good. It might be largely used to relieve the monotonous drab of modern cement-fronted houses by being introduced in the friezes over the windows, in the architraves, string-courses, &c. Any common glass will do; and very thin glass might be applied to ceilings, which would be as easily cleaned as our windows. Glass when bedded solid will bear considerable wear, and, unlike paint or paper, can be repaired if damaged. Any broken squares can be picked out and replaced with new ones, and the whole is again perfect.

I enclose my card, and would give your correspondent further information if he desires it.

W. U. JAMES.

HAMILTON PLACE, PICCADILLY.

THE new mouth to Park-lane is extensively used, as was to be expected. Some low but ornate buildings that have been erected on the east side of it have led to many inquiries. The fact is, they are stables, in substitution of some formerly there, which were taken down to give increased width to the road, and are shared by the Earl Dalkeith, Sir Edward Antrobus, the Marquis Conyngham, and Mr. Baring. The building—designed by Mr. George Vulliamy, the architect to the Board,—has red-brick facing and Portland stone, some of the ornamental bricks being supplied by Mr. Richardson, of Vauxhall. Mr. Bradwell was the builder, and the iron joists and girders required in the construction were supplied by Messrs. Measures, Brothers, & Co., of Southwark-street. There is a turret at either end, 40 ft. high, and the centre of the building breaks forward a short distance before the flanks on either side. According to the *Metropolitan*, "the ground-floor is entirely occupied by stables, some portion of which have been fitted up by Messrs. Cottam & Co., of Winsley-street, Oxford-street, with their patent dove-tail wedge sill to the stall divisions. Also a patent vertical over-feeding hay-rack, with sliding grating and seed-box to the mangers, which will be fitted with their patent halter-guide and registered shackle. The back of the mangers is lined with enamelled tiles, of a light sage-green tint, from Messrs. Minton, Hollins, & Co. Another section of the stables has been fitted up by Messrs. Musgrave, of Belfast." Considering the fineness of the situation, it is to be regretted that a site for the stables was not found elsewhere. There is still some vacant ground at the Piccadilly end, on the eastern side, which forms a magnificent situation for one or more Town mansions.

ACCIDENTS.

Birmingham.—The roofs of three adjoining houses in Exeter-row, Birmingham, have fallen in, pushing the parapet, about 4 ft. high and 60 ft. long, into the street. A man who was passing was struck by the falling bricks, and badly injured. The inmates of the rooms had to make a hasty escape from their beds, as the front of the house is bulged out. The houses were very old, and the roof, a heavy tiled one, is supposed to have been affected by the continued wet.

Sheffield.—At the Clyde Steel and Ironworks in the Wicker, belonging to Samuel Osborn & Co., the company were enlarging their steel foundry by erecting an additional shop, skirting the river Don. The building was about 36 ft. long, and 17 ft. wide. On Saturday morning, while the men were at work, the middle girder suddenly snapped in two, and the centre structure collapsed, and fell into the river. It was found that although four of the men at work were much cut and bruised about the head, no bones, fortunately, were broken. The building was being erected by Mr. James Fishman, and at first considerable anxiety was felt by him and his workmen as to the cause of the accident. When they came to inspect the girder that had given way a flaw was found in it which it is said had been *stopped up with lead*. When the full weight it was intended to carry came to press upon it, it proved unequal to the strain, and suddenly snapped in the middle, and the centre part of the building came down. The damage is estimated at 200*l*.

Landore.—An inquest has been held at Landore, to inquire into the circumstances attending the death of a labourer who was suffocated by a quantity of earth falling upon him while he was working at the Landore Steel Works. The assistant storekeeper said that he was passing by a large opening from 25 ft. to 30 ft. deep, and 10 ft. or 12 ft. wide, which had been dug for the purpose of putting in the foundation of a wall. He saw the deceased and another man down in the opening; the deceased was knocking a prop as if he intended to knock it out. Deceased asked what time it was. He passed on, and in about ten minutes returned, and saw the earth had fallen in. Steps were taken for recovering the men who were believed to be in the hole. Ebenezer Meredith, plate-layer, said that the sides of the excavation were well shored up with timber, and secured. When found the deceased was in a stooping position, but from the fact of small gravel being closely packed round him he must have been suffocated. Charles Lockley, foreman bricklayer, said that the excavation had been open for five months, and some concrete had been placed at the bottom. Nothing else had since been done to it up to last Monday, when he set the deceased and another man to clear away the spoil that had dropped in, to be ready for the masons. It was no part of their duty to interfere with the props or struts. If the props had been knocked away, the earth would be likely to fall in. Some other evidence was given, and the jury returned a verdict of "Accidental Death."

MONUMENTAL.

Statue of Sir Humphry Davy for Penzance.—The committee for carrying out the scheme have raised enough money to authorise them to order a marble statue from the Messrs. Wills, of Euston-road, London,—a statue the model of which was generally approved. The statue itself now approaches completion, and the last difficulty is as to the site. At first the statue was to be fixed between the pillars of the piazza of the Market-house. As a last resource it was resolved that it should be placed in front of the Post-office, on a cab-stand. Mr. T. S. Bolitho, however, says the *Cornish Telegraph*, lest the statue of Sir Humphry Davy should be placed in what a very large majority of persons consider an unsuitable spot, has now formally offered 25 superficial yards of his land south-west of the Public Buildings for the pedestal and figure. There are some conditions attached to this offer which will have to be carefully considered.

Memorial of Sir Thomas White, Coventry.—Mr. Poynton, of Messrs. Lester, Hodkinson & Poynton, Midland Architectural Metal Works, has submitted a design for the proposed memorial He suggested that the breadth of the base should be 8 ft., that the height from the platform shoul be 45 ft., and that there should be a statue o Sir Thomas in a sitting position, and which should be 5 ft. 6 in. in height. The following resolution as to it has been carried:—"The committee consider the same a highly artistic work, and admirably adapted for the purpose." The chairman urged the collectors to be energetic in getting subscriptions to the fund. Mr. Poynton's design is now being exhibited.

MARKETS IN THE CITY OF LONDON.

SIR,—The discussion at the meeting of the Common Council of the City of London relative to Farringdon Market is perplexing to those not behind the scenes, particularly as while one member asserted that the Corporation was losing 5,000*l*. yearly on the Farringdon Market, another proclaimed that the market was so overwhelmed with business that space could not be found for the market-gardeners' carts; and, therefore, amidst this confusion, every prudent citizen must rejoice that the Common Council has decided against the proposition of spending 150,000*l*. upon Farringdon Market, referring the

report back to the committee for further consideration.

At this meeting the startling announcement was made that for new markets, and enlarging the old markets, the City of London had committed themselves to the amount of half a million of money: doubtless, it is the duty of a municipality to provide markets for the citizens, but, of course, the expenditure should be kept within prudent limits, avoiding a lavish architectural display on the market buildings as not required.

I will take this opportunity of alluding to the provision-markets within the City of London;—Spitalfields, for vegetables; Whitechapel and Leadenhall, for butcher's meat; Leadenhall, also for poultry and game; Billingsgate, for fish; Mark-lane, for wheat; Farringdon, for vegetables; the Metropolitan (Smithfield), for meat; the Columbia, for vegetables and fish; and out of the City, although the property of the City, the market for Foreign Cattle at Deptford.

Thus it will be seen that the City of London has provided eleven markets, a number not called for by the population of the City, which, I believe, does not exceed 100,000 persons, but calculated for the whole of London, which would embrace an area of at least fifteen or twenty miles round St. Paul's, and certainly the revenues of the City should not be mortgaged for the benefit of the world of London without some chance of its redemption. OLD JEWRY.

INSTITUTION OF SURVEYORS.

THE annual general meeting of this society was held at 12, Great George-street, on Monday last. Mr. Edward Norton Clifton was elected president for the ensuing year, in place of the retiring president, Mr. Richard Hall. It appeared from the report that the society is rapidly increasing in numbers, and now includes in its ranks a large majority of the surveyors and leading land agents of the kingdom. Many valuable and interesting papers have been read at the fortnightly meetings of the past session, and have been printed among the "Transactions" of the society. It was announced that arrangements were in progress for the erection of a lecture-hall, library, and offices, and which, it is anticipated, will be ready for occupation by the commencement of the next session, in November. The annual dinner will take place early in July.

THE EXCURSION OF THE ARCHITECTURAL ASSOCIATION.

FOR the third annual excursion, under the direction of Mr. Edmund Sharpe, it has been decided to visit Northamptonshire. On Monday, the 19th of August, the meet will be at Stamford, about fifteen miles from the nearest point of last year's expedition. After devoting some time to the buildings of that town, and of its immediate neighbourhood, the party will proceed southwards, by Oundle and Wellingborough, to Northampton; visiting many of the very superior parish churches and other buildings to be found there; most of them not entirely strangers to those who know duly their Brandon, Johnson, Wickes, Caveler, &c. On Saturday, the 24th, the final dinner will take place at Northampton,—the point nearest to London,—an arrangement that will enable the members to reach their homes, in most parts of England, that evening.

It is considered that the party should not comprise more than fifty persons, in order that the hotel accommodation at the towns visited may not be too severely taxed. Early application to the secretaries of the Association, especially on the part of those living out of London, may be desirable. Members of the Association will naturally have to be first considered, if any serious difficulty should arise as to numbers. It is not, however, wished to exclude non-members occupied in the study of English architecture.

The list of buildings to be visited, as it stands at present, comprises the four churches at Stamford (Lincolnshire), and St. Leonard's, close by; Tickencote, Ryhall, the two Castertons, and Ketton, in Rutland county; in Northants, Barnack, Oundle, Cotterstock, Tansor, Fotheringhay, Warmington, and Polebrook; between Oundle and Wellingborough, the two Aldwinkles, Shrapston, Islip, Denford, Woodford, Ringstead, Raunds, Stanwick; from Wellingborough, Finedon, Irthlingborough, Higham Ferrers, Rushden, will be visited. Then the church at Kingsthorpe and the churches the Eleanor Cross, the St. John's Hospital, at Northampton. From the time of coming upon the river Nene, at Fotheringhay, in the north-east of the county, these churches are rarely a couple of miles distant from its course, which is thus to be practically followed all the way to Northampton.

The catalogue certainly has an inviting sound, and, with such weather as has been secured on other occasions, the old, ever-present spirit of comradeship will secure, without fail, a week's good time.

EDWARD PEARCE AND F. DE LORINY.

YOUR correspondent, on p. 410, probably knows all that is to be learnt of Edward Pearce and F. De Loriny in what he has sent to you. The work by the latter was published in 1688, at Paris, in December of which year James II. retreated to France! WYATT PAPWORTH.

MAREZZO MARBLE.

THIS is an invention intended to popularise the use of imitative marble for indoor and outdoor decorative purposes, and an account of it was some time since given in the *Builder*. At a private exhibition of it at the works of the company, in Shenton-street, Old Kent-road, various architects, district surveyors, builders, sculptors, and other professional and practical men were present, and many commended the material,—some from personal experience, and others from what they saw. The advantages of the Marezzo marble, as explained by the manager of the works, M. Raccotti, are its cheapness, the ease and rapidity of manufacture, and its applicability to all purposes of internal building decoration,—such as wall-lining, flooring, chimney-pieces, pedestals, columns, cornices, as well as statuary, fountains, and other out-of-door ornaments. During the visit two slabs, one of Sienna, the other of white-veined marble, were begun and finished ready for the polisher in somewhat less than three-quarters of an hour, the slabs being each about 5 ft. square. The process of manufacture is a very simple one. A slab of plate-glass is laid down, and upon that skeins of silk saturated with the dyes representing the colours and forms of the veins, in the kind of marble to be imitated are spread: upon this, cement, in a semi-liquidised state, is sprinkled to a thickness of about the eighth of an inch. This is left to be thoroughly impregnated with the dye from the silk, which is then removed. More of the liquid cement is added, until the slab acquires the requisite thickness; then it is left to dry (a process that usually occupies about twelve hours), and the slab is then lifted from the glass, and is ready for the polisher. The cost of this Marezzo marble is, we are told, about one-tenth that of real marble, and one-fifth that of scagliola for plain work; and the difference as regards marble in cornices, capitals, statuary, and other work of ornamentation, must necessarily be much greater, seeing that the material is all worked in a semi-fluid state.

EXPLOSIVE AGENTS.

AT the last ordinary meeting of the session of the Institution of Civil Engineers, May 14th, the paper read gave an account of "Explosive Agents applied to Industrial Purposes," by Mr. F. A. Abel, F.R.S. In the course of it, the author pointed out some of the causes of the great difficulty experienced in arriving at anything approaching a precise estimate of the relative power and effect of different explosive agents. Taking dynamite as the type of the practically useful nitro-glycerine preparations, and as certainly one of the strongest, experience had shown it and compressed gun-cotton to be about on an equality in point of power, and to exhibit, in their most advantageous applications, a strength which was estimated at six times that of powder. The plastic nature of dynamite, and its power of resisting penetration by moisture, gave it advantages over compressed gun-cotton, as it could be used in wet blast-holes, and as very irregular holes, or holes terminating in fissures, could be more conveniently and heavily charged with it than with gun-cotton. On the other hand, the readiness with which dynamite froze, and its inertness unless thawed, or fired by special arrangements, and the unpleasant effects experienced occasionally by those using it, were inconveniences not shared by gun-cotton. The advantages presented by these materials in their general application as blasting agents, were shown to consist chiefly in saving of time and labour, especially in tunnelling or in blasting in hard rock. They were also susceptible of advantageous employment as auxiliaries to gunpowder, in the rapid removal of large masses of rock, or of submerged wrecks; the violent explosive agent being first used to produce extensive rending and shattering effects, and the superior displacing effect of powder being afterwards brought to bear. It was pointed out that gunpowder could not be satisfactorily replaced by these violent explosive agents in some kinds of work, where its comparatively gradual action was a specially valuable feature.

CHURCH-BUILDING NEWS.

Wirksworth.—The first contract for the restoration of the parish church is now complete, and the part finished re-opened. This portion, which comprises the tower, transepts, and eastward, was commenced in July, 1870. Mr. George Gilbert Scott is the architect engaged; and the work has been executed by Mr. G. W. Booth, contractor, London and Gosport. The plan of the church is cruciform, and mostly dates from the thirteenth century, or Early English period of architecture. It has a central tower, supported on pillars, transepts with aisles attached; and a chancel, also with aisles. The nave with its aisles, now about to undergo restoration, is peculiar from being extremely short, and in very bad proportion to the rest of the structure; but it is hoped that as the work proceeds, funds will be forthcoming to carry out the wishes of the architect and the committee by extending the nave westward two or three bays, which would make this portion of the fabric in keeping with the rest. The roofs of the chancel and transepts are highly pitched, and the timbers are of wrought and moulded oak, covered with grey stone slate. The roofs of the aisles are also of oak, covered with lead. The tower has been generally repaired and pointed with Portland cement. The walls, some of which have been rebuilt, are of sandstone, with ashlar facing internally, except the transept walls, which are rubble inside, and have been cleaned and pointed. A new clearstory has been added to the chancel, pierced with six cinquefoil tracery windows. Many new windows have been inserted, all filled with moulded tracery. The five-light window in the north transept was given by Mr. James Wall, of Wirksworth. A new stained-glass window has been placed in the north chancel aisle, and was given by Mr. A. Macbeth, of Steeple Grange. The artists were Messrs. Edmunson, of Manchester. The floors have been laid with tiles, arranged in various designs. For the present chairs will be used for seating the church. The cost of the works to this time is between 5,000*l.* and 6,000*l.* During the progress of the works many sculptured fragments of stone, of the Saxon and Norman periods, have been found and preserved, also in some places portions of the Norman foundations. One portion only of that church still exists in the part of the north chancel called the Gell Chapel, the moulded base and walls of which are Norman, and have been preserved. A sum of 1,700*l.* is still required to complete the second portion of the work now in hand, in addition to the cost of lighting, seating, and warming the whole church.

Kingsnorton.—The church, having been restored, has now been reopened for Divine service. The tower has been repaired. The north aisle has been rebuilt on concrete foundations, and the north arcade has also been rebuilt, the piers and arches being taken down, and the stones replaced in their original positions; a lean-to roof has been placed upon this aisle, surmounted by a parapet of the style of the fourteenth century (the date of the north and south arcades). The nave has been re-roofed, on the hammer-beam principle; the roof is open to the ridge, by which means 12 ft. of additional height have been gained. In the south aisle the bases of the piers have been renewed, and the foundations strengthened; the gables (seventeenth century) have been reopened, and the gable windows glazed. In the chancel a new floor of Maw & Co.'s tiles has been laid, and a small Norman "low side" window, discovered on the removal of the brick vestry, has been opened. By private liberality, figures have been placed in the niches of the south front of the tower, the stone corbels of the nave-roof have been carved, a stained-glass window, by Hardman, has been placed in the south aisle, and a sum of money has been given towards providing a reredos of stone and marble.

The work remaining to be done is as follows:—The repair of the spire (much needed), the restoration of the western doorway of the tower, and the addition of an organ-chamber on the north side of the chancel. The amount expended is about £2,800, and a further sum of 500*l.* is required for the completion of the work. The organ has been removed from the tower, and placed at the east end of the north aisle, and an organ-chamber is greatly needed. The removal of the organ has made the western doorway of the tower available for use; but it requires thorough restoration, and this and the spire are included in the work yet to be done. Mr. Hopkins, of Worcester, is the architect.

Oldham. — St. Thomas's Church, Moorside, Oldham, which was to be consecrated on Whit-Monday, has been built at the sole cost of Mr. Thomas Mellodew, of Moorside, from the designs and under the superintendence of Mr. H. Cockbain, of Manchester, architect. The church consists of nave and aisles, a chancel, with chapel on the north, and organ-chamber and vestry on the south; tower, south porch, and a sponsors' vestry on the north, near the font. The nave and aisles form a square of 52 ft., and are divided into four bays, having two-light windows in the aisle walls. The clearstory is lighted by three-light windows. The square or line from which the roof rises is 32 ft. above the floor line. The roof is open-timbered, the main timbers having mouldings; the height from the floor to the ridge is 45 ft. The chancel is divided into three bays, and lighted by three windows on each side; four of these are rose windows, the other two are long two-light windows, with traceried heads and transoms in the middle. The east window is a large five-light, with traceried head, and contains 250 ft. of glass. The floor is paved with tiles. The steps in the sacrarium are of marble, supplied by Messrs. J. & H. Patteson, each step being of a different kind. The top step, forming the dais for the Lord's Table, is of white Sicilian; the space between this and the table being filled with marble mosaic. The table is designed so as to be used either with or without antependium. The walls on each side are covered with a majolica and encaustic tile pattern, designed by the architect, and executed by Messrs. Minton, Hollins, & Co. Recesses (at present built up) are left in the walls for credence and sedilia. The choir is seated with a tier of stalls and two tiers of sub-stalls on each side. The chapel opens with two arches on to the chancel and one arch towards the aisle, and is separated from the rest of the church by open traceried screens; it is lighted by two two-light, square-headed, traceried windows, and a three-light tracery-headed east window. This chapel, which was designed with a special view to week-day services, early communion, and other occasions when the congregations would be very small, has its own entrance-door; and provision is made for a dais for communion-table, a credence, and sedilia. The seats proposed are movable, so as to allow of their being adapted either for use as a distinct chapel or as part of the main building. For the present this part of the building is fitted with benches for the school children. The tower, which is at the west end of the nave, is 20ft. 6 in. square, and rises 92 ft. to the leads, and will be 116 ft. to the top of the finial over the staircase turret, which is carried up at the north-east angle, and is covered with a spire. The lower stage of the tower opens to the nave by a lofty arch, and has a western door and a three-light traceried window over. Above this stage comes the ringers' loft, the clock-chamber, and last, the bell-chamber. The tower is finished by a pierced parapet and turret, 4 ft. in diameter at the angles. The pulpit is of oak, and carved by Earp. The font is of Caen stone, and was executed by Mr. Lunt, sculptor, Oldham. The organ was by Messrs. Hill & Son. The hot-water apparatus for warming the building was supplied by Scott & Brother, of Oldham. The large east window is filled with stained glass, by Hardman, and is the gift of Miss Bridge. The subjects represented are, "The Lord's Supper," which occupies the lower part of the three middle lights; and above and at the sides the spaces are filled with seven incidents from the life of Joseph and his brethren; the tracery and other portions being filled with emblematic devices.

Crumpsall.—A meeting has been held with reference to the fund for rebuilding St. Mary's Church. The Bishop of Manchester occupied the chair. The Rev. Henry Cottam, the rector, said, that at a meeting held soon after the burning of the church, a general committee and a building committee were appointed for raising money or and regulating the affairs of the rebuilding of the church. The result of their work was that 6,230*l.* had been raised; but that amount included 2,300*l.* from the insurance company. Mr. Crowther was appointed architect, and he had drawn the plans. Several tenders had been received, the lowest of which was 7,850*l.*, sent in by Mr. Robinson, jun., of Hyde. In addition to the amount of the tenders there would be various other sums required, which would raise the total amount to 8,610*l.*, without provision for an organ. To meet that there was in hand 6,230*l.*, and subscriptions amounting to several hundred pounds more were expected to come in. The architect and the building committee had had a consultation under the circumstances, and had suggested other plans, the carrying out of which would cost altogether about 6,860*l.* The plan, however, was an imperfect plan; whereas the original plan was perfect, and the difference between the two was 1,880*l.* In other words, deducting 300*l.* insurance-money for the organ from the amount now raised, 1,200*l.* were required to carry out the imperfect plan, and 3,000*l.* to complete the perfect plan. A discussion ensued, and it was resolved "that the building committee be requested to proceed with the rebuilding of the nave, aisles, vestry, and restoration of the tower, estimated to cost 5,300*l.*, and complete them according to the present plans and estimates, and to proceed also with the organ-chamber as soon as they have funds."

Leicester.—Trinity Church has been reopened for divine service. The church has been, to a great extent, rebuilt from designs by Mr. S. S. Teulon, London. The style is a compound of the Continental, closely approaching the Anglo-Norman and Early English in character. The additions are a west-end tower, over 50 ft. high, strongly buttressed, on which will shortly be raised a spire to the height of about 80 ft. over the tower. On either side of this are built two substantial turrets (containing the gallery staircases), each pierced with ten windows of an Early English character. Two ambulatories 4 ft. within run the whole length of the building, each lighted by sixteen windows of the thirteenth century model. The east end has been squared up, and contains an Early English window filled with stained glass, by Mr. Odell, of London. It consists of five lights, and a large centre wheel with two smaller wheels on either side. An organ-chamber has been attached at the south-eastern corner, with opening into the chancel and church. The whole has been built of Luton brick faced with Box Ground stone. The body of the old church has also been cased in Luton, and finished off with a cornice composed of Diseworth white and Luton brick. From the west porch, the principal entrance passes under the tower. The galleries and ambulatories each have a separate entrance, the pavement being hard Yorkshire stone, and lined with white Diseworth brick. The doors are of oak, and the windows filled with quarries of opaque cathedral glass arranged in quaint patterns, with ruby and blue borders. The glazing has been done by Mr. Shardlow. The heating apparatus, planned by the architect, has been carried out by Messrs. Gimson & Co. The whole of the old sittings and fittings have been removed, and replaced by open seats. The bench ends and gallery front are pierced with an Early English design. The centre aisle and chancel are paved with Maw's Brosely tiles, and the ambulatories are in black and red Staffordshire quarries. The Italian roof has been decorated by the firm of Messrs. Heaton, Butler, & Bayne, of London. The body of the church has been lighted by four sunlights, by Messrs. Stroud & Co., of London; and they contain forty-two jets each, and are said to cast a beautiful subdued light. The ambulatories are lighted by sixteen pendants of original design by the architect, supplied by the Leicester Gas Company, under the superintendence of Mr. Hobson. The whole of the restoration has been carried out by Messrs. T. Hewitt & Sons, of London. The stone-work has been supplied by Mr. John Firn. Mr. Basford was clerk of the works. The cost of the alterations is over 5,000*l.*, and the spire, which it has been resolved shall be erected, will cost 700*l.* more.

Decoration of St. Paul's.—The Dean of St. Paul's has declined to call a meeting of the subscribers to consider the recent appointment of a second architect. The request was signed by twenty-eight of the subscribers.

SCHOOL-BUILDING NEWS.

East London.—The foundation-stone of new school-buildings about to be erected in Burdett-road has been laid, in connexion with the Congregational Church there. It is intended to use the rooms likewise for lectures and public meetings. The cost of the proposed schools, including necessary fittings, is estimated at 1,400*l.*, the builder's contract being 1,080*l.* There is no architect. Mr. Adin Sheffield, of Poplar, is the builder.

Boston.—New public schools have been opened here. They consist of a boys' school, a girls' school, and two class-rooms, one of which is adapted for infants. The girls' school is 50 ft., and the boys' 58 ft. long, both being 20 ft. wide, and 16 ft. high, to the springing of the roof, which is left open to the ridge. The several rooms have accommodation for 300 children. Each school has a spacious playground attached to it. The building is constructed of red brick, relieved with white brick dressings, and terra-cotta springers and key-stones to the arches. The interior is built of white bricks, relieved with courses of red and black bricks and tiles. The lower part of the walls,—as high as the children reach,—is built with glazed bricks. In addition to the colouring to the walls, short sentences have been introduced, the letters being formed in encaustic tiles. The schools are warmed by means of open fireplaces, with Milner backs and stone fenders. Ventilation is provided by means of shafts running parallel with the flues of the chimneys, into which openings are left, covered with perforated zinc; also, by openings on each side of the roof, so as to create a thorough draught across the upper part of the school, where it cannot be felt. Ventilators have also been introduced into the ridge, which combine use and also ornament. The framing of the roof is a combination of wood and iron. It is open to the top, and boarded in. The woodwork is varnished, the iron rods and bolts being painted blue. The closets have been fitted up on the dry-earth system. The contract amount for the building was 1,194*l.*, which is about 4*l.* per child. The architect was Mr. W. H. Wheeler. The contract has been executed by Mr. Samuel Sherwin.

Middlesbrough. — The Roman Catholics of of Middlesbrough are about to erect new schools in Lawson-street, in the marshes. Messrs. Hunter & Carr are the architects, and the building will accommodate 300 children. The plans have been approved by the (R. C.) Bishop of Beverley, and, on some minor alterations being made, tenders will be advertised for. The principal promoter of the school is said to be Father Burns, the late Roman Catholic rector at Middlesbrough.

Books Received.

Dilapidations: a Text Book for Architects and Surveyors, in Tabulated Form. By BANISTER FLETCHER, Architect. London: E. & F. N. Spon. 1872.

IN this little book Mr. Banister Fletcher gives the result of a good deal of careful reading on the subject of dilapidations. It must not be supposed that his seventy-eight pages will render their possessor independent of the more elaborate works available, but the student who makes himself master of Mr. Fletcher's tabulated information will find it a very useful introduction, and be able with ease to look further into it with more elaborate exponents. The writer very properly remembers that tenants have rights as well as obligations. It is impossible to deny that some surveyors have a mistaken notion of their duties to lessors employing them, and often seek to obtain for them, to the loss and injury of the tenant, not an old building fairly attended to and kept up, but actually a new building.

VARIORUM.

UNDER the title "Landmarks in English Constitutional History," Mr. J. A. Picton, F.S.A., has printed a paper read by him recently before the Liverpool Literary and Philosophical Society. It is a particularly interesting communication. In some thirty-eight pages Mr. Picton shows graphically the early steps which led this England of ours to its present constitution,—how it became—

> "A land of settled government,
> A land of just and old renown,
> Where freedom broadens slowly down
> From precedent to precedent."

And this he does, not by repeating what other

men have deduced and written, but by the digest of public documents at successive epochs, affording contemporary evidence. It is quite delightful to see how well and profitably our old friend, having given up the struggle of professional life, employs his acquirements and well-earned golden leisure.——According to the *Art Journal* the patent of the Metallic Compression, Casting Company is an American property, which under a company is now about to be worked in this country. "Its operations embrace a large class of utilities, representing a large and very important section in the hardware business, and in respect of the cost and beauty of the products offering extraordinary advantages over the results of the ordinary methods of manufacture now in use. The process of production appears to be adapted to a variety of uses, and only waits for development to show the extent of its application. We know that castings in bronze and other metals are never presentable in commerce until they have been dressed and trimmed with the chisel; but one remarkable advantage in castings by this process is that the most delicate traceries require no after treatment; and of this the best evidence is, that woodcuts and the most minute stereotypes leave the mould in a state so perfect that in working them immediately not the slightest imperfection is perceptible; and nuts and screws, which are among the most delicate of metal products, can be turned out of hand with rapidity and perfection of finish far exceeding the results of all ordinary means."

Miscellanea.

New Font in St. Luke's Church, Derby. A font has been placed in St. Luke's Church. This font stands near the west entrance into the church. It is made of various kinds of marble, worked together. The bowl, which is of veined Hanbury alabaster, is octagonal in plan, and is supported upon a base composed upon a central shaft of Serpentine marble, surrounded by eight smaller detached shafts of Serpentine and Irish green marbles alternately. These shafts have carved foliage capitals, and moulded bases of alabaster. Around the bowl of the font runs a sunk arcade, the arches of which are cusped and supported at each angle by small Derbyshire spar columns, with moulded alabaster caps and bases. The spandrels of the arches are filled with Serpentine marble and Derbyshire spar bosses. The sunk panel on each face is filled with a carving in white Chellaston alabaster, the subjects being taken from Old and New Testament history. The font is surrounded by marble steps, the lower one of Derbyshire bird's-eye, and the upper one Belgian red. The work has been done by Mr. Hall, of the Derby Marble Works, from the designs of Messrs. Stevens & Robinson, the architects for the church. The carving has been executed by Mr. Chambers, of Derby. The bowl of the font is lined with electro gilding.

New Use for Water.—A contrivance that has been erected at a colonial foundry is worthy of notice. At present it is only used for blowing the ordinary blacksmith's fire, but eventually it will, no doubt, be used for the smelting-furnace. It consists of an empty barrel, or quarter cask, stood on end behind the fire, to the centre of which a blast-pipe, from 2 in. to 3 in. in diameter, is fixed. On the top of the cask is another pipe, the same size as the blast-pipe, some 6 ft. in height, with a funnel-shaped top. Just above this there is a horizontal water-pipe of the ordinary service size, with a nozzle, having an aperture of ⅛ in. in diameter, fixed at right angles—that is, pointing down the pipe leading to the barrel, down which there rushes, with considerable force, a tiny jet of water, which causes a rush through the blast-pipe that is far superior both in power and steadiness to any that can be obtained from the common blacksmith's bellows. The waste water, which is very limited in quantity, escapes through a pipe attached for the purpose to the bottom of the barrel.—*Adelaide Observer.*

The Rateability of the New Foreign Cattle-Market.—On the opening of the new Foreign Cattle-Market at Deptford, the property was sought to be assessed to the parochial rates at the gross value of 11,400*l.*, and a rateable value of 9,500*l.* Against this assessment the Corporation of the City of London appealed, the result being an agreement to reduce the original assessment to a gross value of 5,825*l.*, and a rateable value of 4,807*l.*

The Oxygenation of our Gas.—The supply of oxygen gas to the public—in the same way as ordinary gas, to be used for improving street illumination, or to become an instrument in our metallurgical processes,—is again talked of. M. Tessie du Motay's process for producing oxygen cheaply, consists of charging retorts with a mixture of manganate of soda and oxide of copper, from which large quantities of gas are evolved at very small cost, and it is offered to the public at one franc the cubic mètre. Applications are made by the company to the Municipal Council to lay down mains, and to make the necessary arrangements for supplying the public with this gas. One would think, however, that the more simple and obvious way to improve our gas, is to compel the gas companies to give better gas. The vile rubbish usually given is really disgraceful. A second supply, providing oxygen gas wherewith to doctor it, will only enable the adulterators to give worse gas than ever; and they will certainly do this, should any such ponderous way of amending what can so easily and simply be improved be adopted. Amalgamations ought not to have been allowed. What the companies *could* do for the public behoof when amalgamated has turned out, as the *Builder* urged, anything but what they *would* do.

Ventilation of Dwellings of the Poor.—Mr. Liddle, the Whitechapel medical officer of health, says,—"In my report for the quarter ending Sept. 30, 1871, I drew attention to the defective ventilation of the dwellings of the poor, and I pointed out that there was an intimate relation between such defective ventilation and the mortality from tubercular and other diseases of a similar class; and I further showed, by the returns of the Registrar-General, that this class of disease, which is generally admitted to be caused by the breathing of impure air, has a greater mortality than the whole class of miasmatic diseases; the latter being 23·4 per cent. of the total mortality, while the former amounts to 27·8 per cent. Nothing to my mind is more clear than that the attention of the Board and the sanitary officers must be directed to the defective state of the ventilation of the dwellings of the poor; for consumption, and the whole tubercular class, viz., scrofula, mesenteric disease, hydrocephalus, convulsions, premature birth, teething, atrophy and debility, and tubercular meningitis, are chiefly caused by the defective ventilation of dwelling-houses, and particularly of sleeping-rooms, in which at least one-third of one's existence is passed."

New Offices of the City of London Union. These offices in Bartholomew-close, the completion of which we have mentioned, have been erected from designs prepared by Mr. W. Hudson, architect, of Doctors' Commons, which were selected from those of six architects, who had been invited to submit plans in competition; and the contract was undertaken in July last by Messrs. Hill & Son, for the sum of 5,894*l.* According to the *City Press*, besides the general offices for the clerk and registrar to the Union, the building includes a Board-room, 45 ft. long by 31 ft., and 21 ft. in height; a room for the meetings of the Assessment Committee, 34 ft. by 20 ft., with waiting-rooms for appellants; also spacious and lofty waiting-rooms, with airy yards for the poor persons in attendance upon the Relief Committees; a residence for the messenger and housekeeper; medical officers' rooms, strong rooms for books and documents; and there is cellarage throughout. The room has been furnished by Messrs. Cooper & Holt. The benches are covered with dark green morocco; they are of oak, and the tables, &c., are, of course, made to match.

Derby Licensed Victuallers' Asylum.—The Mayor of Derby has laid the foundation-stone of the Derby Licensed Victuallers' Asylum, which is about to be erected on the Nottingham-road. The cost of the erection and endowment of the proposed building will probably amount to about 2,500*l.*, and it is proposed to allow each inmate 10*s.* 6*d.* per week. Messrs. Giles & Brookhouse are the architects, and Mr. Dusautoy the builder.

The Canal Accident at Birmingham.—It is almost impossible to give an estimate of the whole damage done by the bursting of the Worcester Canal, announced last week, but it amounts to several thousands. It is roughly estimated that the damage done to one nursery amounts to 300*l.* The canal was made in 1797, and is 29 miles in length. Its breadth is 42 ft., and its depth 6 ft.

Laying the Chief Stone of Royal Engineers' Institute, Chatham.—The chief stone of the Royal Engineers' Institute, at Chatham, has been laid by the Duke of Cambridge. The new building, which, before it is completed, will cost upwards of 20,000*l.*, will present a front principally of brick, with stone and terra-cotta enrichments. In this new Institute will be gathered all the various schools of the corps; and the different studies of the officers and non-commissioned officers will be carried on under one roof. Among the things provided in the Institute will be a lecture-theatre, capable of seating some 800 persons, various rooms for museums, halls of study or class-rooms, committee-rooms, officers' library, rooms for photographic works, printing schools, chemical laboratory, &c. Captain Marsh, R.E., is carrying out the work, assisted by Sergeant Mayne, military foreman of works, under the sole direction of Colonel Lovell, the Commanding Royal Engineer of the district. Mr. George Sollitt, of Strood, is the contractor.

The Artists' Benevolent Fund.—The anniversary dinner of this corporation is to take place this, Saturday, evening, the 8th, Mr. R. N. Fowler, M.P., presiding. This fund suffers, in the opinion of the public, from the impression that aid is given only to its own members. It ought, however, to be known that it consists of two distinct branches, the "Artists' Annuity Fund," and the "Artists' Benevolent Fund." While the Artists' Annuity Fund is wholly supported by the contributions of its members for their own relief in sickness or old age, and neither asks for, nor receives, any support from the public; the Artists' Benevolent Fund is a strictly charitable society, and has for its object the relief of such of the widows and orphans of members of the Artists' Annuity Fund as are left in need. This is supported by the donations and subscriptions of the patrons of the fine arts and artists, and the annual contributions of the members of the Annuity Fund. Mr. L. Young, the secretary, at 4, Trafalgar-square, W.C., will give any information that may be required.

The West Front of Chester Cathedral.—Another meeting has been held in the Town-hall, under the presidency of the Mayor, for the purpose of further considering the approach to the west front of the cathedral. The meeting was attended by the bishop, the dean, Canon Kingsley, Sir T. G. Frost, and others. The town-clerk had ascertained that there was little chance of carrying out the more complete scheme, which, it was said, would cost 4,000*l.*, and that the smaller one would cost 2,500*l.* As there were 1,700*l.* promised, however, the bishop thought the smaller scheme should be put aside, and Mr. Brown thought they should go on pluckily for the larger one. Eventually, the bishop, the mayor, Mr. Potts, and the town-clerk, were appointed a committee to obtain information.

An Iron Screen.—A new cast-iron sanctuary screen has been erected in the Roman Catholic Church, Newport, Monmouth. It is 51 ft. wide by 22 ft. 6 in. high in the centre, and divided into nineteen bays or compartments by ornamental shafts and arches, supporting foliated cresting and ridge, where passion-flowers are introduced. Over the centre compartment or bay, which is 4 ft. 10 in. wide, are three figures, each more than 3 ft. high, representing the Crucifixion, the Blessed Virgin, and a St. John. The screen has been cast by Mr. J. Nicholas, iron-founder, Newport, from full-sized drawings and under the supervision of Mr. E. A. Lansdowne, architect.

The Railway Bridges in the Metropolis. Works involving an improvement of an important character are said to be now in progress at the railway bridges and arches belonging to the several railway companies south of the Thames. The several bridges crossing over the various thoroughfares in Lambeth, Camberwell, Brixton, and other portions of South London, are now being covered above the footpaths with corrugated iron, to carry away the water. The South-Eastern Company's bridge crossing over the Thames Embankment, at Charing-cross, is also being similarly encased. An indictment against some of the companies is pending.

St. Michael's, Chester-square. — The Marquis of Westminster has laid the foundation stone of the new vicarage-house for St. Michael's, Chester-square. The house is being built in the Buckingham Palace-road, from designs of Mr. R. J. Withers, architect. The marquis gives the site and other assistance.

The Proposed New Schools, Oxford.—In a recent Convocation the decree was discussed which proposed to adopt the report of the delegacy recommending that new schools should be built on the Angel site, and the decree was carried by twenty-seven placets to four non-placets. It was stated by Professor Price during the debate that the probable cost would not exceed 40,000*l.*, and that the funds at the disposal of the University would be able to bear that sum. A further decree was also carried that a delegacy of nine persons should be appointed to procure a design and estimates to be submitted for the approval or disapproval of Convocation.

A Whole Family attacked by Typhoid Fever.—The family of Lady Caroline Haskoll, sister of the late Earl of Kellie, and widow of the Rev. Joseph Haskoll, have been attacked, at East Retford, Nottinghamshire, by typhoid fever of a very bad kind. Five of her ladyship's children were at once laid down, and one girl twelve years of age was quickly carried off. The others are now in a fair way of recovery. It is supposed that this fever arose from the town drains having been flooded and stopped, and then opened by the authorities without due precautions having been used.

The Electric Telegraph.—In connexion with an application to the Privy Council by Sir Charles Wheatstone for a prolongation of his patents on the electric telegraphs, it was stated that about 12,000*l.* had been paid to him out of the 177,000*l.* paid by the Government, and the sum of 7,000*l.* was in abeyance. An offer was made of 9,000*l.*, and, after a discussion, it was agreed that Sir Charles, in addition to the sum already paid, should receive, by payments, 9,200*l.* odd up to the year 1878, which should be deemed sufficient for his great invention.

Cumberland and Westmoreland Archæological Society.—The first meeting for the year of this Society has been held at Kendal. The objects of the meeting were the visiting and inspecting of Kendal parish church, and hearing a paper upon it read by Mr. J. S. Crowther, architect; visiting Heversham Church and Hall, and Beetham Church and Hall, and hearing a paper on Beetham Church read by Mr. J. Bintley. The Rev. James Simpson, Kirkby Stephen, was elected chairman. The Town-hall at Kendal was the rendezvous.

The Lyons Exhibition of 1872.—Complaints are made of the incomplete state of the International Exhibition at Lyons. The Paris artists altogether declined to send any of their works, being of opinion that the promoters did not offer sufficient guarantees that due care would be taken of pictures and statues. Several large German houses who asked for space were refused; but the two provinces lost to France are represented by a large number of exhibitors. Very few contributions appear to have been sent from Great Britain.

Druidical Decadence.—At the closing meeting of the "Annual Movable Delegation" of the Order of Druids, "Past Grand Master" Wood stated "that two-thirds of their lodges were insolvent, and he was prepared to prove it;" and another delegate remarked that "every other Order was in the same position." This is a much more serious matter than many will think it. A proper inquiry should be instituted.

The Light of the Legislature. — The experiment of displaying a light on the clock tower of the New Palace at Westminster has been tried experimentally, and, so far as could be judged, successfully. From the Athenæum Club it appeared like a hybrid between a comet and a moon. It will soon become a familiar object in the metropolis.

Bethnal-green Branch Museum. — We mention with great gratification that his Royal Highness the Prince of Wales has communicated to the Lord President and the Vice-President of the Committee of Council on Education his intention of opening this National Museum on Monday, the 24th of June. The Prince will be accompanied by her Royal Highness the Princess of Wales.

Line of Front and the Metropolitan Board of Works.—Those who are interested in the determination of lines of front by the Board of Works, will find it useful to refer to a case recently decided in the Court of Chancery, Lord Auckland *v.* The Westminster District Board of Works. A full report will be found in the *Times* of May 30th.

"Conditions of Sale."—The case of Torrance *v.* Bolton, just now decided in the Vice-Chancellor's Court, will probably lead auctioneers to the conviction that it is not safe to advertise property to be sold subject to conditions not in the printed particulars, but to be read in the auction room. In the case named the contract was cancelled, and the return of the deposit enforced, the buyer swearing that he had not heard certain statements read at the sale, and which affected the value of the property.

Charlton Kings Surveyorship.—Mr. Sadler having, in pursuance of the understanding upon which he was elected to the highway inspectorship of Cheltenham, resigned his appointment as surveyor of Charlton Kings, the Local Board of the latter place proceeded, at their meeting last week, to the election of his successor. Mr. J. Villar, jun., was the successful candidate.

TENDERS

For the erection of two malthouses, at Market Rasen, in the county of Lincoln, for Mr. Joseph Marriott. Mr. Charles Bailey, architect:—

Fretwell & Mackenzie	£4,275 0 0
Huddlestone	3,459 0 0
Harrison	3,420 0 0
Wallis (accepted)	3,250 0 0

For gasworks, West London District Schools, Ashford, Middlesex. Mr. H. H. Collins, architect; Mr. G. A. Berry, engineer. Quantities supplied by Messrs. Batstone & Hunt:—

Verity & Sons	£4,890 0 0
Cutler & Co.	4,815 0 0
Porter & Co.	4,395 0 0
May & Sons	4,330 0 0

For sundry works in the building of a pair of semi-detached houses, at Finchley, for Mr. James Sims. Mr. E. Shales, architect:—

Patman & Fotheringham	£879 0 0
Kerry	860 0 0
Anley	832 0 0
Southcott & Widgery	790 0 0
Slegg & Long	780 0 0
Niblett & Son (accepted)	753 0 0

For the erection of girls' school, class-rooms, offices, teacher's residence, &c., at Sudbury, for the trustees of Girling's Charity. Mr. Salter, architect:—

For the Whole of the Works.	
Elliston & Son	£657 0 0
Wanford	618 0 0
For School-room, Class-room, &c.	
Grimwood & Sons (accepted)	320 0 0
For Teacher's Residence.	
Grimwood & Sons	257 0 0

For the erection of sixteen cottages, at Glemsford, for Messrs. Kolle & Sons. Mr. Salter, architect:—

Stevenson	£2,570 0 0
Grimwood & Sons	1,900 0 0
Twinn & Son	1,560 0 0
Adams & Debenham	1,362 0 0

For extension to Messrs. Phipps's Brewery, Northampton. Mr. R. Davison, architect. Quantities by Messrs. Curtis & Son:—

Cosford	£3,544 0 0
Redshaw	3,260 0 0
Smith	3,185 0 0
Dunkley (accepted)	2,940 0 0

For the granary, at Barking, for Mr. D. T. Ridley. Mr. Frank Whitmore, architect. Quantities supplied:—

Holmes	£1,696 0 0
Crockett	1,449 0 0
Brown	1,292 0 0
Lacy & Torkington	1,269 0 0
Kirk	1,180 0 0
Mansbridge	1,154 0 0

For warehouse, at Poplar, for Mr. G. Burney. Mr. J. W. Morris, architect:—

Harris & Waldrop	£523 0 0
Heiser	510 0 0
Kilby	487 0 0
Ennor	486 0 0
Limn	480 0 0
Salt	476 12 0
Sheffield	447 0 0
Watts & Holland	445 0 0
Tanner	439 10 0
Atherton & Latta	435 0 0
Abraham	419 0 0

For the erection of a gentleman's residence and stable buildings, at Hampstead. Messrs. Spalding & Knight, architects:—

Peto, Brothers	£4,939 0 0
Patman & Fotheringham	4,769 0 0
Jackson & Shaw	4,720 0 0
Wicks, Bangs, & Co.	4,719 0 0
Scrivener & White	4,597 0 0
Carter & Son	4,563 0 0
Mann	4,559 0 0
Stephenson	4,383 0 0

For coach-house and stable, Holmwood, Dorking. Mr. F. J. Dibble, architect:—

Putney	£424 0 0
Lynn & Dudley	340 0 0
Johnson	333 14 0
Pledge	313 9 7

For infants' school, Falkland-road, Dorking. Mr. F. J. Dibble, architect:—

Lynn & Dudley	£690 0 0
Clear	690 0 0
Hamblin, Brothers	660 0 0
Putney	653 0 0

For school and residence, at Ellen's-green, Ewhurst, Surrey. Mr. F. J. Dibble, architect:—

Port (accepted)	£563 8 0

For three new shops and houses, at Hampstead, for Mr. J. Culverhouse. Mr. W. Thompson, architect:—

Brass	£4,530 0 0
Conder	4,423 0 0
Nixon & Son	4,288 0 0
Gammon & Sons	4,278 0 0
Manley & Rogers	4,087 0 0
Henshaw	4,067 0 0
Kelly, Brothers	3,983 0 0
Newman & Mann	3,936 0 0
Scrivener & White	3,928 0 0
Nightingale	3,873 0 0

For new laundry, at the St. George's Union Workhouse, Kensington. Mr. H. Saxon Snell, architect:—

Foster	£1,856 0 0
W. Howard	1,700 0 0
Bridgman & Nuthall	1,557 0 0
Manley & Rogers	1,527 0 0
Gibson, Brothers	1,495 0 0
Lathey, Brothers	1,490 0 0
Stimpson & Co.	1,485 0 0
Wall	1,372 0 0
Howard, Brothers	1,289 0 0
For Engineering Works and Fittings.	
Benham & Sons	1,384 0 0
Paice	1,245 0 0
May	1,134 13 0
Potter & Sons	874 0 0

For external painting, &c., at the Bethnal-green Workhouse, for the Guardians of Bethnal-green. Mr. William Mundy, architect:—

Catlett & Co.	£660 0 0!
Thomerson	645 10 0
Brown	630 0 0
Thorpe	595 0 0
Gribble	594 18 6
Hosking, Brothers	527 0 0
Blackmore & Morley	482 0 0
Gough	459 0 0
King & Son	440 0 0
Brown & Sons	415 0 0
Young & Son	410 0 0
Lovell & Co. (accepted)	389 0 0
Richards	330 0 0!

For villa residence, at Chislehurst, for Mr. J. L. Morgan. Messrs. Habershon & Pite, architects:—

Garratt	£1,667 0 0
Moore	1,607 0 0
Gumball	1,546 0 0
Grover	1,525 0 0
Cary & Co.	1,497 0 0
Forrest	1,494 0 0
Boden	1,465 0 0
Blackmore & Co.	1,403 0 0
Morgan	1,396 10 0
Whiting	1,392 0 0
Willis	1,344 0 0

For villas, Gold Tops, Newport. Messrs. G. Habershon, Pite, & Fawckner, architects:—

	No. 1.	No. 2.
Weeds	£1,330	£1,356
Miles	1,120	1,225
Bewler	1,118	1,259
Bearfield	1,118	1,230
Jenkins	1,115	1,200
Linton	1,100	1,200
Whittaker	1,107	1,190
Richards	1,095	1,196
Hazell	986	1,034

For villa residence, at Sydenham, for General Bayly. Mr. John Norton, architect:—

Moore & Grainger	£4,490 0 0
Blease	4,420 0 0
Ward	4,300 0 0
Aitchison & Walker	4,139 0 0
Stepenson	4,102 0 0
Mansbridge	3,995 0 0
Wagner	3,987 0 0
Lovell	3,903 0 0
Newton & Co.	3,870 0 0
Crook & Wall	3,750 0 0
Gooding	3,750 0 0
Wright, Brothers, & Goodchild	3,695 0 0
Gough	3,650 0 0
Waterson	3,649 0 0
Hughesdon	3,625 0 0
Cooke & Groome	3,591 0 0

For rebuilding the parish church of Builth, South Wales. Mr. John Norton, architect:—

Diment	£5,178 0 0
Dove, Brothers	5,170 0 0
Moreland	4,971 0 0
Welsh & Son	4,539 0 0
Clarke	4,465 0 0

For alterations and additions to Brunswick-road Chapel, Gloucester. Chas. G. Searle & Son, architects. Quantities supplied:—

Estcourt	£2,825 0 0
Meredith	2,430 0 0
Jones	2,410 0 0
Clutterbuck	2,300 0 0
King & Godwin	2,285 0 0
Sims (accepted)	1,935 0 0

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Limits of age, 26 and 40.
Persons wishing to compete for these appointments must, before JUNE 11th, make written application on a form which may be procured from the Secretary, Civil Service Commission, London, S.W.
Such inquiries as may be necessary will be made by the Civil Service Commissioners, with regard to the age of candidates, and also as to their health and character.
Dublin Castle, 14th May, 1872.

BUILDING ESTATE. — WANTED, a SECRETARY, having had practical experience in the management of a first-class building estate. None others need apply. Applicants to state salary, age, whether married or single.—Full particulars (by letter only) of prior engagements, and references as to character and qualifications, to be addressed to *F. B.* care of Mr. ALGAR, 8, Clement's-lane, E.C. on or before June 14th, 1872.

BOROUGH of SALFORD.—The Salford District General Purposes Committee require the services of a CLERK of WORKS, to superintend the construction of the works in connexion with their intercepting sewer. No one need apply who has not had considerable experience in carrying out extensive sewerage, brick, and earth works.—Applications, in candidate's own handwriting, stating salary expected, and inclosing copy testimonials, endorsed "Clerk of Works," to be sent to the undersigned not later than the 12th of June instant.—By order,
EDWIN ANDREW, Town Clerk.
Town-hall, Salford, June 1st, 1872.

PARISH of CHELSEA.—INSPECTOR of NUISANCES.—Notice is hereby given, that the Vestry of this parish will, at their meeting on TUESDAY, the 11th day of JUNE inst. consider applications for the appointment of INSPECTOR of NUISANCES. The salary, including travelling expenses, will be 100*l.* a year. Candidates must be between thirty and forty-five years of age. The person appointed will be required to square and cube dimensions, to reside in a central part of the parish, and to devote the whole of his time to the duties of his office. A statement of the duties, subject to additions and variations from time to time, may be seen here. Applications, in the candidate's own handwriting, with testimonials, of recent date, as to character and fitness for the office, not more than three in number, may be sent in until TWELVE o'clock on the day above-mentioned, and must be under cover, endorsed "Application for the Appointment of Inspector of Nuisances." The expenses of application will have to be defrayed by the applicants.—By order of the Vestry,
CHARLES LAHEE, Vestry Clerk.
Vestry Hall, King's-road, Chelsea, S.W. June 1, 1872.

THE Corporation of Hanley REQUIRE the services of an ASSISTANT SURVEYOR, competent to make surveys, take levels, make plans, sections, specifications, and estimates for sewerage and paving works, to superintend the paving, &c. of new streets, to measure the same for contractors, and also apportion the cost to the property owners, generally to perform all duties required by the Borough Surveyor, under whose direction and control he will be placed, and to devote the whole of his time to the duties of the office.
The salary will commence at 80*l.* per annum. Candidates canvassing the members of the Town Council will be disqualified.
Applications, with testimonials, &c. stating age, to be forwarded to the Office of the Town Clerk, on or before TUESDAY, the 18th day of JUNE next. MATT. F. BLAKISTON, Town Clerk.
Hanley, May 30, 1872.

HENLEY LOCAL BOARD.—APPOINTMENT of SURVEYOR and INSPECTOR of NUISANCES.—Notice is hereby given that the Henley Local Board will, at a meeting to be holden on TUESDAY, the 2nd day of JULY next, proceed to elect a SURVEYOR and INSPECTOR of NUISANCES for the District, at a salary of 50*l.* per annum.
Applications in the handwriting of the candidates, stating age, and accompanied by testimonials of recent date, must be sent to me at my Office, Henley-on-Thames, before TWELVE o'clock on MONDAY, the 24th day of JUNE instant.
Selected Candidates will have notice to attend the Board on the day of election, but no travelling or other expenses will be allowed.—By order of the Local Board,
JOHN COOPER, Clerk.
Henley, June 5th, 1872.

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